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# QUANTITATIVE CHARACTERIZATION of MICRO-TOPOGRAPHY — A BIBLIOGRAPHY of INDUSTRIAL SURFACE METROLOGY

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*Provides 4800 literature citations on the quantification of micro- and nano-topographic surfaces and a brief introduction to the field of industrial surface metrology*

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# QUANTITATIVE CHARACTERIZATION of MICRO-TOPOGRAPHY

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## A BIBLIOGRAPHY of INDUSTRIAL SURFACE METROLOGY

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## Abstract

A comprehensive bibliography of *surface metrology*, the numerical description and analysis of manufactured surfaces, improves access to research on topographic quantification that lies outside the usual Earth-science sources. A brief essay accompanying the 4800 literature citations introduces the field of industrial surface metrology to geomorphologists and other Earth scientists, describes similarities and differences between the two realms, and raises issues to be addressed in any attempt to unify the general practice of surface quantification. A sampling of Internet Web-site addresses and full abstracts on surface metrology supplements the main bibliography.

## Introduction

This report makes available to digital-terrain modelers, geomorphologists, and other Earth scientists and engineers a new resource for the numerical description and analysis of topography. Rather than landscapes **(Pike, 1993)**[1], the attached bibliography of *surface metrology* addresses the quantification of manufactured surfaces. Although the micro- and nano-scale features described in the 4800 references listed here (Appendix I) include none of the terrain familiar to geologists, geographers, oceanographers, or civil and military engineers, students of the Earth will find in this listing much common ground with their industrial counterparts. In work on the microscopic terrains created by mechanical, physical, and chemical processes (Thomas, 1982a, 1999), engineers and scientists in manufacturing have long been contributing to *morphometry*, the generic discipline of shape quantification.

The Earth science most closely related to surface metrology is geomorphology, particularly its sub-specialties (for example, *terrain modeling*) that treat landscapes mathematically and statistically as continuous surfaces in the absence of (or despite) well-defined spatial structure **(Moore and others, 1991; Pike, 1995a; Lane and others, 1998)**. Some manufacturing processes do yield spatial structure and miniature forms that can be delineated individually (Amar and Family, 1996; Medeiros-Ribeiro and others, 1998). Such surfaces may be more usefully analyzed by the quantitative approaches developed in geomorphology for drainage basins, volcanoes, sand dunes, meteorite-impact craters, and other landforms that are spatially discrete. A number of geologists and geophysicists have analyzed the random fine-scale roughness of fractured and faulted rock faces (Türk and others, 1987; Ameen, 1995; Brown, 1995), but the micro-quantification—increasingly by 3-D digital data—of machined or etched surfaces created by industrial procedures is unknown to most Earth scientists. The work referenced in Appendices I and II reveals that surface characterization by mechanical and optical engineers, and most recently high-technology manufacturers and materials scientists, has many parallels to the study of conventional landscapes.

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[1] References in **bold type** are listed only at the close of this essay; all other citations are in the chronologically ordered Appendix I; those underscored also have full abstracts in Appendix II.

## Surface Metrology

*Metrology* is the practice of measurement for quality control in manufacturing. Its application to surfaces, known in industry as *surface metrology* or *surface topography*, arose from the need to quantify the roughness of metal surfaces, especially those in moving contact (for example, automotive piston rings and cylinder walls; Figures 1 and 2). The practice now embraces most other areas of manufacturing. The statistical morphology of micro-topography affects a great many industrial functions and products, ranging from paint adhesion to the performance of cosmetics and the precision of reflecting surfaces. The development of metrology has paralleled that of 20th Century science and engineering technology.

For a quick introduction to recent metrologic work in a variety of areas, see Appendices II and III. Thomas (1992) is a brief general overview. Whitehouse (1994), Stout (1994), and Thomas (1999) are major reviews that emphasize tribology—the study of friction, wear, and lubrication—particularly in mechanical engineering, metrology's earliest and best-known application. Hähner and Spencer (1998) is a non-technical introduction to tribology and its evolution as a field of applied physics. For an up-to-date review of surface roughness in tribology and contact mechanics, see Majumdar and Bhushan (1998). Thomas (1982a) is an older summary of metrology, and Russ (1994) deals specifically with fractal surface characteristics. Bhushan (1997) reviews some of the most recent developments of metrology and tribology, nanoscopic applications to magnetic tape and computer disk drives. Proceedings of an important conference on metrology and the properties of engineering surfaces were published last year (Rosén and Crafoord, 1997). (The next meeting in this series will be in the UK in April, 2000.)

Surface metrology is applied and practical. It arose well before World War II (Abbott and Firestone, 1933)[2] from the demands upon mechanical engineers (together with development of the necessary precision instrumentation) to improve product quality by narrowing the tolerances of manufactured components. To do this it became necessary to quantify the wear on such moving parts as crankshafts and metal bearings and correlate measurements of surface roughness with the properties of lubricants, the composition of bearing alloys, and methods of surface finish (Thomas and Charlton, 1981). Metrology has long contributed to the development of national and international standards that employ surface measurements to control metal-finishing (ISO, 1996a, b). More recently, surface measurements have been correlated with manufacturing processes in which thin films of various elements and compounds are deposited on smooth substrates, and other applications in materials science and the semiconductor industry (Amar and Family, 1996; R.K. Singh and others, 1996). Maintaining reliable performance of magnetic storage devices and other hardware essential to the Information Age would be impossible without metrology (Bhushan, 1990, 1997).

Much of the work on surface metrology appears in *Wear, Industrial Metrology, Precision Engineering,* the *Journal of Computer-Assisted Microscopy,* and other specialized publications in engineering, as well as those in applied physics and chemistry. The optics literature is a particularly good example. Because unwarranted roughness on lenses and mirrors can degrade the performance of lasers and optical imaging systems, surface metrology has long been an essential practice in optical engineering (Bennett and Mattsson, 1989). The Society of Photo-optical Instrumentation Engineers (SPIE) and the American Society for Precision Engineering (ASPE) from time to time hold meetings partly or entirely devoted to surface metrology. Quantification of micro-surface roughness is increasingly encountered in biology and medicine. For instance, fine-scale measurement in chemical engineering is important in maintaining cleanliness and consequent biological sterility of fermentation vessels. In medicine, surface roughness affects the assimilation to the human body of surgical implants and prostheses of

[2] Appendix I does not record the origins of surface metrology. An extensive German literature on surface finish, including descriptions of some of the earliest instruments, was reviewed by Schmaltz (1936).

various kinds. Wennerberg's (1996) review of the effects of roughness on the performance of implants, for example, contains over 200 references (see also Wennerberg and others, 1996).

The sophistication of industrial practice in measuring the fine-scale roughness of surfaces has increased steadily with improvements in instrumentation. Metrologic techniques since World War II have advanced from central-tendency and dispersion statistics of surface-topographic profiles of metal bearings (Posey, 1946; Myers, 1962), through the modeling of these two-dimensional samples as random, isotropic Gaussian fields using autocorrelation and spectral analysis (Sayles and Thomas, 1978b, c; Whitehouse and Phillips, 1978), to a major shift now underway. This latest change, the advent of digital 3-D imaging and micro-topographic mapping (Russ, 1994; Stout, 1994) of metal, semiconductor, and even organic surfaces (Mechaber and others, 1996), is revolutionizing metrology. Before this breakthrough, industrial surfaces were characterized by tracing a linear profile across a sample area with a micro-stylus instrument (Thomas, 1992). A long-standing disadvantage was the unidirectional character of the resulting sample, which could not capture surface anisotropy without resorting to multiple passes of the instrument. Also, resolution of such instruments was insufficient to address many industrial problems (Rosén and others, 1996).

Methodological limitations of the sampling profile (El-Soudani, 1978; Nowicki, 1985; Sherrington and Smith, 1987), to say nothing of inadequate resolving power, have been overcome by such precision devices as the scanning tunneling and atomic force microscopes (AFM) and optical interferometers (Wickramasinghe, 1989; Robinson and others, 1991). These instruments image and measure industrial surfaces at very fine resolution **(Amato, 1997)** and enable accurate topographic maps to be created down to the atomic scale (Appendix III). With the profile thus giving way to the surface as the preferred sampling design (Stout, 1994), all the powerful techniques of spatial analysis—many well known in the Earth sciences—have become available to micro- and nano-morphometry. Metrology has not hesitated to develop these techniques, independently of other fields, from work by such applied mathematicians as **Matheron (1965), Mandelbrot (1967, 1975)**, and **Daubechies (1990)**.

Arguably, methods of 3-D analysis in surface metrology, among the first disciplines to apply fractal concepts (Berry, 1979; Pfeifer, 1984; Thomas and Thomas, 1986b) and wavelets (**Mallat, 1989**; Wolf and Husson, 1993; Shibutani and Kitagawa, 1995; Lee and others, 1997) to surface characterization, now rival those of Earth scientists in their sophistication (Russ, 1993, 1994; Dong and others, 1994a, b; Amar and Family, 1996).

## The Thomas Bibliography

The 4800 literature citations presented here (Appendix I) trace the evolution of surface metrology over some 70 years. (The technical disciplines employing metrology date back much further; Hähner and Spencer, 1998). All but a hundred or so of these references were compiled by the second author, a senior engineer in industrial surface metrology in the U.K., who may be best known to Earth scientists for a 1978 Nature article, "Surface topography as a nonstationary random process", co-authored with Richard Sayles. His 1982 book Rough Surfaces, the second edition of which is scheduled for release in early 1999 (http://www.wspc.com.sg/books/engineering/p086.html), has been a standard reference in the field. (A list of 650 references appeared earlier; Thomas and King, 1977). A bibliography of surface metrology by Thomas that is current through 1995 and contains full abstracts is available commercially on CD-ROM from the Swedish firm Toponova AB, (toponova@algonet.se).

Appendix I, which samples but a fraction of the published work in metrology, is the largest bibliography on surface roughness available in the open literature. The listing comprises all of the Thomas CD-ROM citations (less their abstracts), a partial 1996 update by Thomas, some 1997-98 entries added by Pike, and a number of older citations (also added by Pike) not in the original Thomas lists. The bibliography is not cast in standard USGS style and the entries differ in format and completeness (for example, in the use of abbreviations), reflecting the listing's long evolution and non-USGS origin. Random changes during conversion of the computer file from its original format altered some references, and occasional missing or added text characters and spaces will be encountered, along with a number of misspelled author names. Many more of these irregularities were repaired in editing the list for this report, and some 500 duplicate entries were removed. Appendix II is a 1996 subset of the Thomas bibliography. It contains 36 complete abstracts that offer details of recent work in surface metrology, much of which deals explicitly with fractals and other surface measures of current interest to Earth scientists. Appendix III, a dozen Internet Web sites devoted to metrologic topics, supplements the print citations with instant, if still-rudimentary, access to the field.

Appendix I differs from bibliographies compiled originally by the second author in one important respect. We have recast it chronologically, retaining alphabetical order only within one-year brackets. One reason for this change is historical. Earth scientists and others unfamiliar with industrial surface metrology can trace its conceptual and technical development from the 1930's[3] and compare this evolution with that of surface quantification in their own specialties. Students of metrology will find this helpful as well. Second, the rapid increase in research activity is made more evident. Entries for 1995, the last year that approaches completeness, alone comprise 20% of the listing. Also, industrial morphometry is diversifying from mechanical engineering, once the dominant application of surface-roughness measurement, into semiconductors and other high-technology materials. The chronological order not only documents this change but also helps group information on the newest specialties apart from earlier, more traditional, work in metrology without our having to rearrange the entire bibliography topically—an undertaking not possible at this time. Finally, up-to-date work in various subfields of surface metrology (through, say, 1996) can be found fairly rapidly by browsing only the most recent years, and without having to know the name of an author.

The subject matter of the attached listing is quite diverse, and we do not review it here. Nor did we cull it to include just those works most likely to appeal to Earth scientists, at best a dubious exercise in subjectivity. Rather, we believe all 4800 citations make an important statement: that Earth science is not the only field in which surface-form representation is of such central importance—in volume and variety industrial surface metrology now dwarfs the practice of morphometry in geomorphology. Much material in Appendix I will seem exotic to geomorphologists and their colleagues in geology and physical geography. The bulk of the references, particularly those to atomic-scale surfaces in such serials as *Surface Science*, do not relate directly to the DEM-based 3-D measurement of topography. However, amid such unfamiliar terms as "molecular-beam epitaxy" and "photobleaching in side chain NLO-polymers," terrain modelers will glean information and concepts that touch upon their own work. This exchange works in both directions. The increasingly common references in Appendix I to Earth-science topics, mostly engineering applications in hydrology and remote sensing, emphasizing terrain roughness show that industrial metrologists, too, are venturing outside their field for new ideas to solve problems in surface characterization (Schloss, 1966; Manninen, 1992; Govindaraju and Kavvas, 1994; Claussen, 1995; Premus and Alexandrou, 1995).

## Discussion—a Convergence of Disciplines

The need for terrain modelers and metrologists alike to analyze surface form links the Earth sciences with industry in a common endeavor that exemplifies the growing integration of much modern science and technology **(Mandelbrot, 1975; Bak, 1996; Wilson, 1998a)**. Here, in publishing a bibliography of surface metrology, we examine a few implications of this convergence and the prognosis for a unified practice of surface quantification.

What makes the convergence possible is an operational definition by which both Earth science and industry find it convenient to define most surfaces: within a specified scale of interest, a surface is broadly planar but irregular in detail. By this convention, all surfaces regardless of scale have a similar gross geometry

[3] See footnote 2.

comprising two long (spatial) dimensions and one short one (relief). Consequently all surface irregularities can be measured in Cartesian coordinates, *(X,Y)* in the spatial domain defined by the overall-planar trend of the surface and *(Z)* in the relief domain normal to that trend. This simple convention is important, because it distinguishes nominally two-dimensional, continuous surfaces from those of three-dimensional objects—plants and animals, sedimentary particles, and mineral grains—which are better quantified by such morphometric approaches as landmark analysis **(Bookstein, 1995; Marcus and others, 1996)**. Formally, the characterization of any continuous surface as defined here is grounded in the unifying concept of the *spatial random field,* which in turn is based on mathematical set-theory and probability **(Adler, 1981; Christakos, 1992)**.

We restrict the discussion here to *single-valued* surfaces, those for which all values of *(X,Y)* have only one value of *(Z)*. This condition does not hold for convoluted surfaces, where contour lines depicting such re-entrant features as overhangs and cavities "disappear" beneath contours at higher elevations. Examples include much karst topography (landscape scale), a gravel river-bed or beach (finer scale), and soils (very fine scale). On a molecular scale, some industrial surfaces also are *multi-valued;* evidence from surface chemistry indicates that the area of absorption of a machined surface is many times its geometric area. However, the measurable surface—the *response* surface (Agullo and Pages-Fita, 1974) rather than the *true* surface—is necessarily single-valued with respect to height because the techniques of measurement and data reduction in metrology (and most Earth sciences) do not cope effectively with multiple values of height. It is because of this restriction that a fractal response-surface is self-affine rather than self-similar. Soil scientists, who must measure porosity and other internal characteristics of soil structure, have devised techniques—some of them adapted from stereology—to quantify multi-valued surfaces **(Droogers and others, 1998; Horgan, 1998)**. Such complex surfaces, where *X, Y,* and *Z* all may assume values of equal magnitude, differ qualitatively from "surface" as defined here.

The task of characterizing single-valued surfaces in three dimensions reduces to a problem in descriptive geometry and topology, referenced to a relief datum, $Z_0$. The $Z_0$-datum convention—mean sea level for Earth, arbitrarily determined elevations or levels on both other planets and on surfaces formed by industrial processes—can be applied to the relief forms on any surface, whatever its scale or the processes that formed it. The peaks, depressions, valleys, ridges, and other surface features thus observed in 3-D space are characterized numerically by various measures in profile *(Z)* and plan *(X,Y)*. These measures are equally germane to solving practical problems on the shop floor and in the Earth sciences. The cross-hatched topography of honed scratches on a machined cylinder-wall, for example, is as rich in relief content, and as capable of measurement and analysis, to a mechanical engineer as the terrain defining the drainage pattern of a fluvial system is to a geomorphologist.

## Some Similarities

In practice, terrain modeling and surface metrology have much in common. Above all, understanding the links between a surface and the process(es) shaping it is equally important in industry and the Earth sciences. That the specific processes themselves and the motivations for understanding them may differ in scale or kind do not diminish this similarity. As in geomorphology, moreover, the two overarching agents that shape the irregularities on all industrial surfaces are erosion (Rosén and others, 1996) and deposition (Medeiros-Ribeiro and others, 1998) acting on broader surfaces formed by other means—for example, a tectonic event in the case of geology, a metal casting or laboratory-grown silicon wafer in industry. Material is removed from or added to a surface, or otherwise redistributed, in various ways. Erosion or deposition may figure in the shaping and finishing of a manufactured surface as well as in changes that take place throughout its service life as a component of a more complex device. Erosion of industrial surfaces occurs by processes that have coarser-scale counterparts in the Earth sciences. Among these are brittle and ductile failure of materials under directed stress, chemical etching (Boland and Weaver, 1998) and decomposition, change of state (melting), and various types of abrasion—commonly in the presence of a lubricant or other fluid. Certain industrial finishing processes, such as peening and roller burnishing, neither remove nor add to existing material. Instead they redistribute it by plastically deforming higher regions of the surface so that material flows into lower regions—a rearrangement of mass that has parallels in both geophysics and geomorphology. Surfaces formed by some processes in both fields are thought to exhibit such recently identified characteristics as fractal geometry, chaos, and self-organized criticality **(Mandelbrot, 1975; Bak, 1996)**.

Many of the operational issues that arise in assessing form:process links in the two realms are identical. First, all surface descriptions save that of a perfect plane (the only scale-independent surface) are inexact and incomplete. Because no amount of information can capture all attributes of a surface, the abstraction of its form is always a compromise. The usual practice is to take a sampling of measurements over some representative area. To do this both Earth science and industry rely increasingly on square-grid arrays (now supplanting linear traverses or profiles) of surface heights, or digital elevation models (DEMs; also DTMs, digital terrain models). Resolution of the gridded data, the $(X,Y)$ distance between heights—commonly constrained by prevailing technology, determines the precision of results from subsequent analysis. In analyzing these measurements, similar approaches to capturing the many attributes of surface form—together with the computer algorithms to express them, are employed by both disciplines. The specific techniques are grounded in descriptive geometry, statistics, and topology. They include such basic tools of morphometry as elevation-frequency, analysis of peak elevations and closed depressions, expression in plan and profile of the angles of slope and slope curvature, the distribution of slope aspect or azimuth, spatial autocorrelation and power-spectral-density analysis, division of a surface into areas of similar form, calculation of fractal dimensions, and assessing relief:distance properties by geostatistical (semi-variogram or structure-function; **Wald, 1989**) modeling.

Similar technical problems in surface analysis are common to both Earth science and industry. These include improving data quality through new instrumentation and more precise techniques of measurement, characterizing nonstationary (anisotropic, or spatially inhomogeneous) surfaces, an irksome "parameter rash" of untested or incompatible measures (compare the criticism by geomorphologist **Evans, 1972**, with those of engineers Thomas, 1981, and Whitehouse, 1982a), parameter correlation and redundancy (Gorlenko, 1981; Nowicki, 1985), quantifying surface texture by spatial (topologic) descriptors [geomorphologists who only recently rediscovered **Maxwell's 1870** paper "On hills and dales" **(Mark and Warntz, 1982)** will enjoy reading of engineer Paul Scott's (1997) similar epiphany], evaluating the scale-dependence of surface form, devising numerical "signatures" or "fingerprints" to characterize surfaces created by known processes **(Pike, 1995a)**, equifinality—the vexing problem of similarly shaped surfaces formed by different processes, and developing more effective ways to visualize surface complexity.

One of the most enduring gifts of the computer revolution, exploited alike by the Earth sciences and industry, is machine visualization—the calculation of synthetic surfaces (both the very large and the very small) that are otherwise invisible to the unaided eye. Although here we emphasize the numerical description, or parameterization, of surfaces, we point out that computer visualization is the perceptual component of morphometry: 3-D images of natural terrain and manufactured surfaces are computed from the same digital height data required for descriptive statistics. The two most common types of resulting graphics for surfaces are the wireframe ("fish-net") plot and the rather more aesthetic shaded-relief image. Whereas Earth scientists commonly compute relief-shaded topography for areas too large or remote to be viewed in the field **(Pike, 1992)**, metrologists create images to better interpret surfaces too small to be viewed with the unaided eye. Important discoveries can result. For example, by comparing wireframe plots from high-resolution AFM data, Rosén and others (1996) found that the observed height-distribution resulting from wear in one area of an automotive-engine cylinder differed dramatically from what had been predicted by the prevailing tribological model (Figure 2). Descriptive statistics, which also revealed the cylinder-bore surfaces to be multifractal, agreed with the visual results.

Industry and the Earth sciences converge most closely via metrology and terrain modeling, respectively, in the quantification of surface roughness *per se*. Although roughness measurement is the very point of much of metrology, before advent of the digital computer it was but a minor activity in geology, geography, geophysics, and civil and military engineering **(Goldberg, 1962)**. With proliferation of such computer-intensive techniques as spectral and fractal analysis, the quantification of relief "roughness" in continuous terrain (in contradistinction to discrete "landforms") has become routine. Among the earliest applications were line-of-sight evaluation for military operations **(Wood, 1961)**, measurement of aircraft-runway and highway roughness **(Houbolt, 1961)**, and evaluation of cross-country trafficability by vehicles **(Bekker, 1969)**. Quantitative knowledge of the Moon's surface roughness was essential to success of the Apollo program (Schloss, 1966; **Rozema, 1969**). More recently, surface roughness has been measured to determine acoustic-scattering properties of Earth's polar sea-ice **(Rothrock and Thorndike, 1980)** and seafloor **(Fox and Hayes, 1985)**, to model the effect of broad-scale terrain on weather conditions **(Daly and others, 1994)**, and, at the micro-scale, to quantify the effect of fracture surfaces on the flow of fluid through rocks **(Glover and others, 1998)**. Related work has quantified the roughness of natural stream channels **(Nikora and others, 1998)**, agricultural fields **(Römkens and Wang, 1986)**, complex terrain surrounding turbines (windmills) that harvest wind energy for generating electric power **(Mortensen and Petersen, 1997)**, and topography that is vulnerable to debris-flow landslides **(Ellen and others, 1997)**.

## Some Differences

The overlap of Earth science and manufacturing described here does not diminish differences in their treatment of surface form. First among these is process. Because most agents of erosion and deposition and their resulting surface forms contrast sharply in the two fields, the likelihood of much "interlocking of causal explanations across disciplines" **(Wilson, 1998a)** is remote at this time. For example, the varied responses of air masses to topography as they pass over different mountain ranges are not governed by the same physical principles that control, say, the varied interactions of crankshaft journals and their enclosing bearings in response to different lubricants and techniques of metal finish. The prime difference is absence of fluvial erosion and deposition in manufacturing; no miniature rivers are carving meanders in silicon wafers. Other gravity-driven agents, such as slope-failure, also are absent from industrial procedures. However, chemical solution and etching are common to both geomorphology and industry, as is abrasion, both by direct contact (glacial erosion; grinding and honing) and by wind-driven particles (eolian erosion; grit-blasting and milling by water-jet technology). Given the rapid progress of ongoing research in both fields, we caution against too-hasty dismissal of the possibility of some convergence in the nature of fundamental surface-forming processes.

Another contrast lies in the spatial structure of surfaces addressed by the two disciplines. Much of the Earth's topography comprises integrated, hierarchical networks of discrete, nested drainage basins that are well defined. Nonfluvial landforms that also can be delimited areally (among them volcanoes and sand dunes) are recognized on Earth's surface, on its seafloor, and on surfaces of other planets. Industrial processes and contact mechanics tend to create continuous surfaces that have less systematic spatial structure. Many techniques of fabrication and mechanisms of wear do impart distinctive surface textures, but these commonly are repeating patterns; discrete microscopic "landforms" (Aguilar and others, 1992c; Amar and Family, 1996) are rare. The rank-and-file orderliness of atoms and molecules deposited on silicon wafers and other substrates **(Amato, 1997)** has no clear analogs in geomorphology. We predict the contrast in surface structure will diminish. As the techniques of high-technology progress and further discoveries are made in the microscopic properties of materials surfaces, more spatial structure will be identified in industrial applications (Lee and others, 1998).

An obvious if less fundamental difference, also related to process, is scale: landforms are orders of magnitude larger than the micro- and nanoscopic irregularities on machined surfaces or magnetic tape. Similarity in format of the digital height data required for analysis in both cases pales beside the contrast in scale of the surface features they are intended to capture. Both disciplines now obtain matrices of surface elevations automatically from sophisticated equipment, but Earth scientists image km-wide swaths of terrain from aircraft or satellites whereas the metrologists' laboratory instruments measure samples as small as 100 microns across. The resolution of DEMs for geomorphic work ranges from mm in studies of tilled fields to tens, even hundreds, of km in tectonic modeling; analysis of industrial surfaces requires DEM resolutions of millionths to billionths of a millimeter. We believe that this contrast, however dramatic, is not very important and will become less so as sub-visual surface forms and processes become better understood.

The disparity in scale has at least one important consequence—unlike Earth science, surface metrology remains restricted to small samples. It is not yet feasible to obtain continuous 3-D data for a large workpiece, such as the entire top-to-bottom extent of an automotive cylinder, in one pass of a device that images at micro- to nanometer resolution. High-precison instruments are still too limited in their range of travel. Nor is it feasible, as it is in digital-cartographic applications in the Earth sciences, to achieve continuous large-area coverage by joining together many smaller map quadrangles. The reason for this lies in the way metrological elevations are usually referred—not to a common datum on the measured surface, but to an arbitrary instrument datum that is effectively reset for each new measurement. Scanning laser-interferometers now can stitch smaller samples together into a larger area using pattern-recognition algorithms. However, until such problems as erroneous elevations at sample-area boundaries are solved, the technique remains experimental and the samples small.

Metrology and the Earth sciences deal differently with similar operational problems. An important example is measuring the effects through time of the surface-shaping agents. Geomorphologists like to observe a landscape repeatedly, over the long term, to learn how topography evolves under the prevailing set of processes. This is possible for sand dunes and other ephemeral landforms **(Norris, 1966)**. It is also comparatively easy to reoccupy a survey site to take new data. However, most landscapes change so slowly that effects measurable even over the lifetime of the observer may be minor. To get around this difficulty, samples in space may be substituted for those in time. Under this assumption, the *ergodic* hypothesis, measurements are taken on several coeval, preferably neighboring, landscapes that appear to show evolutionary, sequential, development under the same regime **(Chorley and others, 1984, pp. 32-33, 328-330)**. This expedient must be applied with caution when interpreting the morphometry of a set of samples to formulate models of landscape evolution.

Unlike geomorphologists, metrologists would appear to have unrestricted access to topography that reflects time-dependent effects of surfacing processes, thus clearly linking form with function. Examining "before" and "after" results from wear tests on such parts as automotive bearings and engine cylinders has long been common practice in the laboratory and on the shop floor. However, there is a problem in making quantitative 3-D, not just visual, observations on the components—measuring exactly the same surface before, sometimes during, and after a test run. Because the instrumentation required to obtain fine-scale data is of such high resolution, it is difficult to physically relocate the sample with the precision required to obtain sequential data for the identical sample space. Index marks on the workpiece are too crude for the micro- and nano-precision required to reposition atomic-force microscopes and other devices. Although an experiment can be run on several identical components, each one being measured at a different stage in the test—in analogy with ergodic sampling of landscapes, *strictu sensu* the same micro-surface is not being followed throughout the course of its evolution.

A final difference, that of the objectives of morphometric analysis, mirrors some of the basic cultural differences between science and engineering. Partly this reflects the commercial goals toward which much metrologic work is directed. Metrology is vital to the invention of new products, the most dramatic example being those from the semiconductor industry. Metrologists have long measured manufactured objects to quantify surface irregularities that degrade a product's function and shorten its service life. They wish to achieve predictability of product, improve such industrial properties as the adhesion of paint to metal surfaces, understand the interactions between machined components in moving contact, and control quality in the fabricating process by following industry standards[4]. Earth scientists, particularly geomorphologists, measure topography formed by natural processes. They seek to mitigate natural hazards, assess water and soil resources, probe landscape/climate links, and understand the sequential development of topography in space and time. In related work, oriented less toward interpretation of process and thus perhaps more closely aligned with the objectives of metrology, civil and military engineers quantify terrain to plan transportation and communications facilities, land and maneuver spacecraft, or optimize weapons deployment.

Given such disparate objectives and disciplinary cultures, scientists and engineers working with natural topography thus far have had little occasion to meet professionally with their opposites in industry. Only rarely do results from one discipline appear in publications by the other. Recent exceptions, including the 1996 report by Cardenas-Garcia and Severson and the 1997 paper by Paul Scott, suggest that this trend may be changing.

## Conclusions

Any convergence, however tentative, of manufacturing and Earth science through the quantification of surface form offers an opportunity to exploit the above similarities and explore—perhaps to reconcile—some of the differences in an effort to develop a more unified discipline of surface representation. The bibliography appended here is one step toward this goal. Comparable references lists on terrain modeling in the Earth sciences, now available to the metrology community, constitute another such step **(Pike, 1993, 1995b, 1996[5])**.

Topics in common that remain to be studied range widely, from the nature of physical and chemical surface-forming processes, through sampling designs and parameter choices, to manipulation and interpretation of descriptive measures. Metrologists have much to glean from Earth science's longer experience with surface quantification, particularly post-World War II work on continuous terrain by civil and military engineers and oceanographers. Geographic information systems (GIS) technology, with its wealth of analytic tools for manipulating and visualizing raster DEMs, is an underutilized resource that deserves to become more routine in metrology. Conversely, industry and the vast research enterprise supporting it are actively advancing surface morphometry in directions that converge with the objectives of terrain modelers. Earth scientists are not alone in trying to understand the self-similar and multi-fractal properties they observe in topography. Geomorphologists and hydrologists would do well to follow the efforts of industry engineers and scientists who also are interpreting fractal configurations and probing questions of self-organization, albeit in the fine-scale landscapes of computer storage-devices, automotive sheet-metal, and human skin.

This report directs Earth scientists toward industry's experience in the quantitative representation of surfaces. We hope that the two communities will discover in one other concepts and methods that can be applied to advance knowledge in their own areas. The importance of surface form in high-technology manufacturing, particularly in such heavily supported areas as semiconductors and advanced materials, assures that metrology will continue to develop fresh ideas, some of which may adapt to characterization of the land surface by Earth scientists. We believe that such cross-fertilization is worth exploring, even if the goal of a unified field of surface-form quantification is not immediately forthcoming. If the course of science and technology in the 20th Century has taught us one thing, it is to expect the unexpected:

[4] Manufacturing tolerances have been narrowing by a factor of three each decade for the last 30 years (Kind and Quinn, 1998).

[5] The fourth report in this series has been prepared; it will be released early in 1999.

particularly in today's interdisciplinary, globalized research environment, new knowledge can emerge from any quarter. Or, again after **Wilson (1998b)**, "There is no fixed way to make and establish a scientific discovery. Throw everything you can at the subject ..."

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## References not cited in Appendices I-III

Adler, R.J., 1981, The geometry of random fields: New York, Wiley and Sons, 280 p.

Amato, Ivan, 1997, Candid cameras for the nanoworld: Science, v. 276, 27 June, p. 1982-1985.

Bak, Per, 1996, How Nature Works—the Science of Self-Organized Criticality: New York, Springer, 212 p.

Bekker, M.G., 1969, Introduction to Terrain-Vehicle Systems: Ann Arbor, The University of Michigan Press, 846 p.

Bookstein, F.L., 1995, The morphometric synthesis for landmarks and edge-elements in images: Terra Nova, v. 7, no. 4, p. 393-407.

Chorley, R.J., Schumm, S.A., and Sugden, D.E., 1984, Geomorphology: Methuen, London and New York, 605 p.

Christakos, George, 1992, Random Field Models in Earth Sciences: New York, Academic Press, 474 p.

Daly, Christopher, Neilson, R.P., and Phillips, D.L., 1994, A statistical-topographic model for mapping climatological precipitation over mountainous terrain: Journal of Applied Meteorology, v. 33, no. 2, p. 140-158.

Daubechies, I., 1990, The wavelet transform, time-frequency localization and signal analysis: IEEE Transactions on Information Theory, v. 36, no. 5, p. 961-1005.

Droogers, P., Stein, A., Bouma, J., and de Boer, G., 1998, Parameters for describing soil macroporosity derived from staining patterns: Geoderma, v. 83, nos. 3-4, p. 293-308.

Ellen, S.D., Mark, R.K., Wieczorek, G.F., Wentworth, C.M., Ramsey, D.W., and May, T.E., 1997, Map Showing Principal Debris Flow Source Areas in the San Francisco Bay Region, California: U.S. Geological Survey, Open-file report 97-745-E, 8 p.

Evans, I.S., 1972, General geomorphometry, derivatives of altitude and descriptive statistics, *in* Chorley, R.J., ed., Spatial Analysis in Geomorphology: New York, Harper and Row, p. 17-90.

Fox, C.G., and Hayes, D.E., 1985, Quantitative methods for analyzing the roughness of the seafloor: Reviews of Geophysics and Space Physics, v. 23, no. 1, p. 1-48.

Goldberg, G.M., 1962, The derivation of quantitative surface data from gross sources: Surveying and Mapping, v. 22, no. 4, p. 537-548.

Glover, P.W.J., Matsuki, K., Hikima, R., and Hayashi, K., 1998, Synthetic rough fractures in rocks: Journal of Geophysical Research, v. 103, no. B5, p. 9609-9620.

Horgan, G.W., 1998, Mathematical morphology for analyzing soil structure from images: European Journal of Soil Science, v. 49, no. 2, p. 161-173.

Houbolt, J.C., 1961, Runway roughness studies in the aeronautical field: Journal of the Air Transport Division, Proceedings of the American Society of Civil Engineers, v. 87, no. AT 1, p. 12-31.

Lane, S.N., Richards, K.S., and Chandler, J.H., eds., 1998, Landform Monitoring, Modelling and Analysis: New York, Chichester UK, John Wiley, 454 p.

Mallat, S., 1989, A theory for multiresolution signal decomposition; the wavelet representation: IEEE Transactions on Pattern Analysis and Machine Intelligence, v. 11, no. 7, p. 674-693.

Mandelbrot, B.B., 1967, How long is the coastline of Britain? Statistical self-similarity and fractional dimension: Science, v. 156, no. 3775, p. 636-638.

-------- 1975, Les Objects Fractal; Forme, Hasard et Dimension: Paris, Flammarion, 191 p.

Marcus, L.F., Corti, Marco, Loy, Anna, Naylor, G.J.P., and Slice, D.E., eds., 1996, Advances in Morphometrics, Proceedings of the 1993 NATO Advanced Study Institute, Series A, Vol. 284: New York, Plenum, 587 p.

Mark, D.M., and Warntz, William, 1982, James Clerk Maxwell, the first quantitative geomorphologist? Discussion: Mathematical Geology, v. 14, no. 2, p. 195-197.

Matheron, George, 1965, Les Variables Régionalisées et Leur Estimation—une Application de la Théorie des Fonctions Aléatoires aux Sciences de la Nature: Paris, Masson et Cie, Editeurs, 305 p.

Maxwell, J.C., 1870, On hills and dales: The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science, v. 40, 4th Series, July-Dec., no. 269, p. 421-427. [reprinted 1965, *in* Niven, W.D., ed., The Scientific Papers of James Clerk Maxwell: New York, Dover Press, v. II]

Moore, I.D., Grayson, R.B., and Ladson, A.R., 1991, Digital terrain modelling—a review of hydrological, geomorphological and biological applications: Hydrological Processes, v. 5, no. 1, p. 3-30.

Mortensen, N.G., and Petersen, E.L., 1997, Influence of topographical input data on the accuracy of wind flow modelling in complex terrain, *in* Watson, Rick, ed., European Wind Energy Conference 1997, October, Dublin, Ireland: Proceedings, p. 317-320.

Nikora, V.I., Goring, D.G., and Biggs, B.J.F., 1998, On gravel-bed roughness characterization: Water Resources Research, v. 34, no. 3, p. 517-527.

Norris, R.M., 1966, Barchan dunes of Imperial Valley, California: Journal of Geology, v. 74, no. 3, p. 292-306.

Pike, R.J., 1992, Machine visualization of synoptic topography by digital image processing, Chapter B *in* Wiltshire, D.A., ed., Selected Papers in the Applied Computer Sciences, 1992, U.S. Geological Survey Bulletin 2016, p. B1-B12.

Pike, R.J., 1993, A bibliography of geomorphometry, with a topical key to the literature and an introduction to the numerical characterization of topographic form: U.S. Geological Survey Open-file Report 93-262A, 132 p.

-------- 1995a, Geomorphometry—progress, practice and prospect, *in* Pike, R.J., and Dikau, Richard, eds., Advances in Geomorphometry: Zeitschrift für Geomorphologie, Supplementband 101, p. 221-238.

-------- 1995b, A bibliography of geomorphometry, the quantitative representation of topography—Supplement 1.0: U.S. Geological Survey, Open-file Report 95-046, 30 p.

-------- 1996, A bibliography of geomorphometry, the quantitative representation of topography—Supplement 2.0: U.S. Geological Survey, Open-file Report 96-726, 52 p.

-------- 1998, Web resources compiled for terrain modeling: Eos, transactions of the American Geophysical Union, v. 79. no. 17, p. 208, *and* http://earth.agu.org/eos_elec/97260e.html.

Römkens, R.J.M., and Wang, J.Y., 1986, Effect of tillage on surface roughness: Transactions of the American Society of Agricultural Engineers, v. 29, no. 2, p. 429-433.

Rothrock, D.A., and Thorndike, A.S., 1980, Geometric properties of the underside of sea ice: Journal of Geophysical Research, v. 85, no. C7, p. 3955-3963.

Rozema, W.J., 1969, The use of spectral analysis in describing lunar surface roughness, *in* Geological Survey Research 1969: U.S. Geological Survey Professional Paper 650-D, p. 180-188.

Wald, L., 1989, Some examples of the use of structure functions in the analysis of satellite images of the ocean: Photogrammetric Engineering and Remote Sensing, v. 55, no. 10, p. 1487-1490.

Wilson, E.O., 1998a, Integrated science and the coming century of the environment: Science, v. 279, 27 March, p. 2047-2048.

-------- 1998b, Scientists, scholars, knaves and fools: The American Scientist, v. 86, no. 1, p. 6-7.

Wood, W.F., 1961, Ranges of unobstructed ground-to-ground visibility, *in* U.S. Army Ordnance Corps symposium, Environmental Factors Influencing Optimum Operation of Ordnance Materiel, San Antonio, Texas, 27-30 September, 1960, Proceedings, p. 17-29.

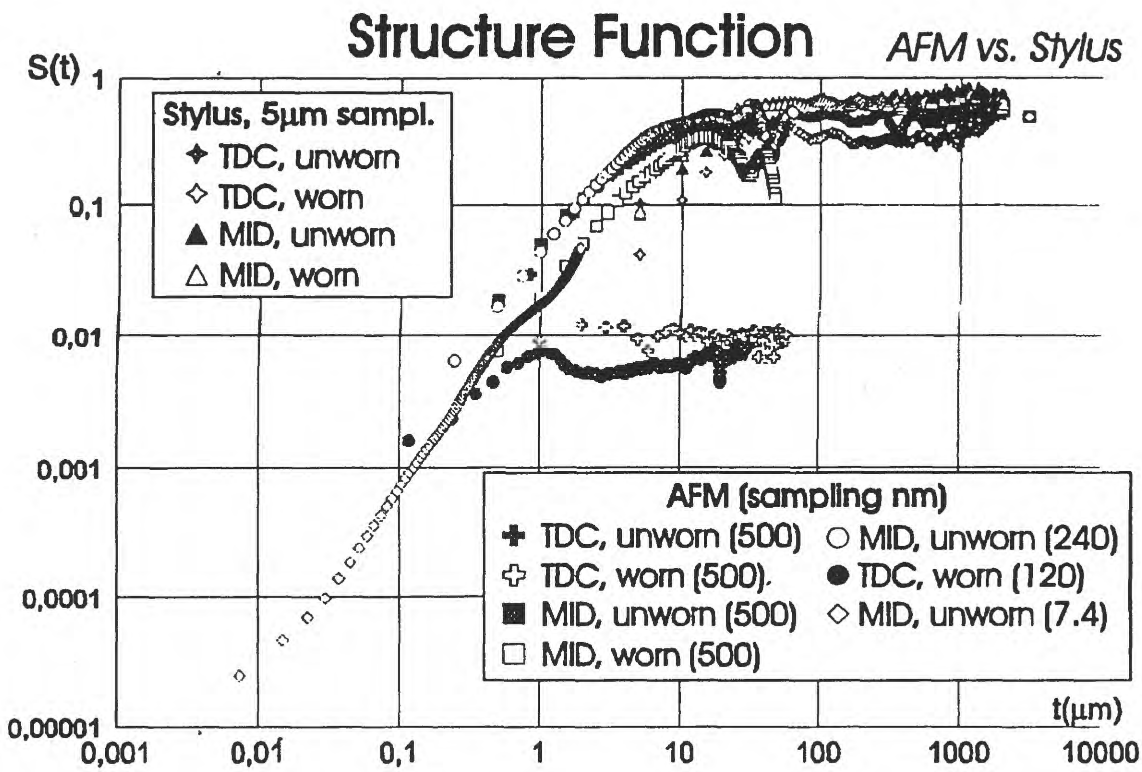


Figure 1. Example of parametric analysis of 3-D surface-metrology height data. Graph shows scale dependence in the surface roughness of a honed cylinder bore of an automobile engine, for worn (lower trend) and unworn (upper trend) regions of the cylinder (Rosén and others, 1997; Thomas, 1997). Inflection of structure function for unworn areas at $\tau \approx 20$ µm corresponds to size of largest honing particles. Surface irregularities smaller than the 20 µm threshold are interpreted as being produced by a single continuous and almost ideally fractal process associated with fracture of the particles. The structure function, or variogram **(Wald, 1989**; **Nikora and others, 1998)**, is a relief:distance plot, $S(\tau) = [z(x)-z(x+\tau)]^2$, where for a topographic profile $z(x)$, $\tau$ = horizontal separation of pairs of surface heights, z (Sayles and Thomas, 1977). Height data measured by an atomic-force microscope (AFM; vertical / horizontal resolution 3 picometers, pm/125 pm) and a conventional stylus instrument (vertical / horizontal resolution 20 nanometers, nm/5 micrometers, µm). TDC = top of piston travel; MID = halfway between top and bottom of piston travel.

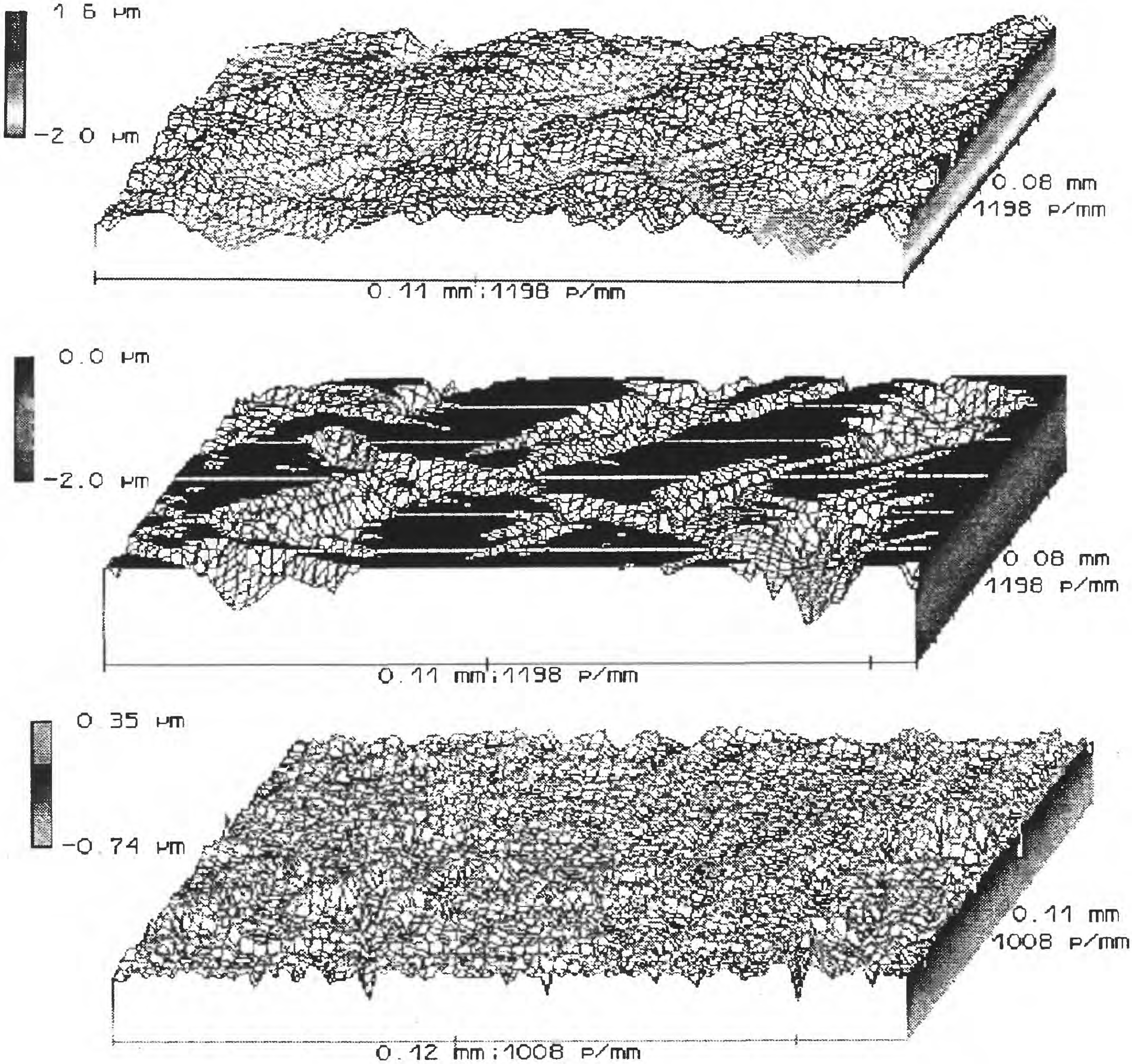


Figure 2. Example of 3-D visualization of surface-metrology height data. Wireframe plots are evidence of the need to reevaluate a prevailing hypothesis for the service performance of honed automotive cylinder bores (Rosén and others, 1996, p. 277-278). Heavy piston ring-to-bore wear expected in a cylinder's top dead center (TDC) section is simulated here (middle panel) by planar truncation of the original unworn surface (top panel), 0.49 µm below the original mean-height datum, to generate a plateau. The worn surface actually observed (bottom panel), however, does not fit this model. The diagram shows an irregular plateau with an entirely different and unexpected geometry, indicating plateau-wear interactions more complex than planar truncation by piston rings. Lower-resolution (1:10) measurements by conventional 2-D stylus-profiling did not reveal this critical difference. Height data measured every 0.48 µm *(X,Y)* by an atomic-force microscope (AFM; resolution 3 *(Z)* and 125 *(X,Y)* picometers, pm). Original figure in color.

Appendix I

# Bibliography of Industrial Surface Metrology


## 1920

Preston, F.W., The structure of abraded glass surfaces: Trans of the Opt. Soc., 23, p. 141-64. (1921/1922).

## 1930

Harrison, R. E. W., A survey of surface quality standards and tolerance costs based on 1929-1930 Precision-Grinding practice: Trans. ASME 53, 1-25 (1931).

Firestone, F.A., Durbin, F.M. and Abbott, E.J., Test for smoothness of machined surfaces: Metal Progress, 21, p. 57-9. (1932).

Gaillard, J., Quality of metal surfaces: Am. Machinist, 6, p. 1149-52. (1932).

Abbott, E. J. and Firestone, F. A., Specifying surface quality: Mech. Engng., 55, p. 569-72. (1933).

Schmaltz, G., Technische Oberflächenkunde: Berlin, Springer Verlag, paging unknown. (1936).

Shaw, H., Recent developments in the measurement and control of surface roughness: J.Instn. Prod. Engrs., 15, p. 369-91. (1936).

Tomebohm, H., Modern tolerance requirements and their scientific determination: Mech. Engng., 58, p. 411-17. (1936).

Abbott, E.J. and Goldschmidt, E., Surface quality: Mech. Engng., 59, p. 813-25. (1937).

Kienzle, O., Industrieanzeiger. Die drei Grundsäulen des Austauschbaus und des Meßwesens (Three basic principles of interchangeability and measurement): Feinmechanik und Präzision, pp. 247. (1937).

Abbott, E.J., Bousky, S. and Williamson,.E., The profilometer: Mech. Engng., 60, p. 205-16. (1938).

Bowden, F.P., and Tabor, David, The area of contact between stationary and between moving surfaces: Proc. Roy. Soc., A169, p. 391-413. (1938).

## 1940

Guild, J., An optical smoothness meter for evaluating the surface finish of metals: J. Sci. Instrum., 17, p. 178-82, (1940).

Schlesinger, G., Surface finish: Inst. of Prod. Engrs., Report, 31p. (1942).

Kayser, J. F., Optical cut method for the determination of surface roughness: Foundry Trade J., v. 70, p. 137-8. (June, 1943).

Milligan, L.H., Surface finish - what surface profile is really like: Grits & Grinds, 34, p. 7-13. (December, 1943).

Bikerman, J.J., Surface roughness and sliding friction: Rev.Mod.Phys., 16, p. 53-68. (1944).

Broadston, J., Distinctive symbol adopted to designate surface finish: Prod. Engng. (USA), 15, p. 704-6. (October, 1944).

Broadston, J. A., Measuring methods described for surface roughness specification: Prod, Engng. (USA), 15, p. 806-10. (December, 1944).

Broadston, J.A., Surface roughness standards for tactual comparisons: Prod.Engng. (USA), 15, p. 756-9. (1944).

Broadston, J.A., Standards for surface quality and machine finish designation: Prod.Engng.(USA), 15, p. 622-5. (September, 1944).

Broadston, J.A., Measurlng and designating surface finish: Iron Age, 154, p. , 62-6. (October 19, 1944).

Broadston, J.A., Measuring and designating surface finish: Iron Age, 154, p. 76-81. (October 26, 1944).

Broadston, J.A., Measuring and designating surface finish: Iron Age, 154, p. 58-62. (November 2, 1944).

Castro, H. L., Measuring roughness in small cavities: Tool Engineer, 13, p. 84. (April, 1944).

Clay, W.E.R., Surface finish: Instn. Automobile Eng.J., 12, p. 9-23. (February, 1944).

Jost, H. P., A case for the qualitative inspection of surface finish: Machy. (London), 65, p. 483-6. (November, 1944).

Jost, H. P., A critical survey of surface-finish parameters: Machy (Lond) 64, p. 690-691 (1944).

Kayser, J.F., Control of fine finished surfaces: Aircraft Engineering, v. 16, p. 25-28. (January, 1944).

Reason, R. E., Surface finish and its measurement: J. Inst. Prod. Engrs., 23, p. 347-72. October, 1944).

Reason, R.E., Hopkins, M.R., and Gamod, G.I., Report on the Measurement of Surface Finish by Stylus Instruments: Leicester, UK, Taylor, Taylor and Hobson. (1944)

Schlesinger, G., Surface finish and the function of parts: Proc. I. Mech. E., 151, p. 153-8. (1944).

## 1945

Herschman, H, K., Replica method for evaluating finish of a metal surface: Mech. Eng., 67, p. 119-22, (1945).

Klemm, W.F., A new evaluation of surface finishes: Tool Engineer, 14, p. 42-4, (1945).

Rose, K., Ultra-fine surfaces on metals: Metals & Alloys, 22, p. 70-5, (July, 1945).

Tarasov, L.P., Relation of surface roughness readings to actual surface profile: Trans. A.S.M.E, 67, p. 189-94, (April 1945).

Timms, C. J., The measurement of finely finished surfaces by optical interference: Sci. Instrum., 22, p. 245-6. (December, 1945).

Wilson, W.K., Surface finish.Effect on fatigue strength: Aircraft Production, 7, p. 189-93, (April 1945).

Womersley, J. R., and M. R. Hopkins, Suggestions concerning the use of the correlogram for the interpretation of measurements of surface finish: Journées des États de surface, p. 135-139 (1945).

Darmody, W, J., Tapering for surface inspection: Am. Mach., 90, p. 134-5. (December, 1946).

Hunter, R.S., A glossmeter for smoothness comparisons of machine-finished surfaces: J.Opt.Soc.Am., 36, p. 178-81. (1946).

Milligan, L.H., Surface finish: Diesel Power, 25, p. 336-8. (March, 1946).

Posey, C.J., Measurement of surface roughness: Mechanical Engineering, v. 68, p. 305-6 and 338. (1946).

Timms, C., Measurement of surface roughness: Metal Treatment, 13, p. 111-8. (Summer, 1946).

Whibley, R. J. M., Production of flat surfaces: Machy. (London), 69, p. 634-9. (November, 1946).

Broadston, J.A., Control and measurement of surface finishes: Steel, 120, 2, p. 82-3, 116, 118 and 121. (January 13, 1947).

Broadston, J.A., Practical aspects of surface finish measurement instrumentation: Iron Age, 159, p. 51-5. (March 1947).

Mikelson, W., Determining surface roughness: Mech. Eng., 69, p. 391-3. (1947).

Timms, C. J., Surface finish measurement of engineering components: Inst. Prod. Engrs., 26, p. 411-26. (December, 1947).

Williamson, D. E., Tracer-point sharpness as affecting roughness measurements: Trans. ASME, 69, p. 319-23. (May, 1947).

Abbott, E.J. and Rupke, E., The Proficorder - An instrument for recording waviness and other surface profiles: Trans. ASME, 70, p. 263-70. (May, 1948).

Johnson, W., Refined surface finishes, their production and properties: The Iron and Coal Trades Rev., 157, p. 1485-7. (December, 1948).

Lewis, C. R. and Underwood, A. F., Designating surface roughness: Mach. Des., 20, p. 137-40. (December, 1948).

Pearson, J. and Hopkins, M.R., Plastic replicas for surface-finish measurement: J. Iron & Steel Inst. p. 67-70. (May, 1948).

Reason, R. E., Hopkins, M.R. and Garrod, R.I., Report on the measurement of surface finish by stylus methods: Rank Taylor Hobson, Leicester, U. K., Report, 89p. no date (ca. 1945-48).

Timms, C. and Scoles, C.A., Some applications of the plastic replica process to surface finish measurement: Machinery (London), v. 73, p. 871-875 (Dec. 1948).

Cameron, A., The surface-roughness of bearing-surfaces and its relation to oil film thickness at breakdown: Proc. I. Mech. E., 161, p. 73-7. (1949).

Martz, L. S., Preliminary report of developments in interrupted surface finishes: Proc. I. Mech. E., 161, p. 1-9. (1949).

Martz, L. S., Surface reflectometer for evaluating polished surfaces: J. Electrodepositors Tech. Soc., 24, p. 1-8. (1949)-.

Mather, K. B., A new method for surface reproduction: Metal Progress, 56, p. 225-7. (August, 1949).

Ollard, E.A., Surface reflectometer for evaluating polished surfaces: J. Electrodepos. Tech. Soc., 24, p. 1-8 (1949).

Sawyer, J.W., Examination of surfaces Permanent records by use of negative reproduction of surfaces by plastic castings: Am. Soc. Nav. Eng. J., 61, p. 819-27, (November, 1949).

Schlesinger, G., Practical application of surface finish: Am. Mach., 93, p. 101-10. (January13, 1949).

## 1950

Bowden, F. P. and Tabor, David, The friction and lubrication of solids.Part 1: Oxford University Press, U.K. 337p. (1950).

Fairfield, H.H. and MacConachie, J., Evaluating casting finishes: Am. Foundryman, 17, p. 47-8. (February, 1950).

Rabinowicz, E., Taper sectioning, A method for the examination of metal surfaces: Metal Industry, 76, p. 83-6. (February 3, 1950).

Salama, M. E., The effect of macro-roughness on the performance of parallel thrust bearings: Proc. I. Mech. E., 163, p. 149-61. (1950).

Thielsch, H. and Stroma, G., Designation of metallic surfaces.Part 1: Metal Finishing, 48, p. 66-70. (September, 1950).

Wagner, C, On the determination of the roughness of metallic surfaces: J. Electrochem. Soc., 97, p. 71-74 (March 1950).

Warner, C.J., On the determination of the roughness of metallic surfaces: Electrochem. Soc., 97, p. 71-4. (March, 1950).

Medhurst, C.W., An instrument for automatically recording waviness of surfaces: J.Sci.Instrum., 28, p. 211-4. (July, 1951).

Reason, R. E., Surface finish: Australasian Engr., 44, 10, p. 48-64. (1951).

Timms, C. and Scoles, C.A., Surface finish measurement, comparison of stylus and optical interference methods: Metal Treatment Drop Forging, 18, p. 450-4 and 459. (October, 1951).

Goldman, I., Which method to evaluate surface rougbness: Materials & Methods, 36, p. 89-93. (December, 1952).

Graneek, M. and Wunsch, H.L., Application of pneumatic gauging to the measurement of surface finish: Machinery, 81, p. 701-7. (1952).

Hooper, W.H.L. and Holden, J.J., Some methods of measuring surface topography as applied to stretcher-strain markings on metal sheet: Inst. of Metals, 81, p. 648. (1952-53).

Lewis, C.R., The gold standard precision specimens of surface roughness: Standardization, 23, p. 238-42. (August, 1952).

Lincoln, B., Frictional and elastic propertie of high polymeric materials: Brit.J.Appl.Phys., 3, p. 260-3. (1952).

Smith, C.S., Grain shapes and other metallurgical applications of topology, *in* Metal Interfaces: Cleveland, OH, American Society for Metals, p. 65-113, (1952).

Archard, J.F., Elastic deformation and contact of surfaces: Nature, 172, p. 918-9. (1953).

Archard, J.F., Contact and rubbing of flat surfaces: J.Appl.Phys., 24, p. 981-8. (1953).

Bidwell, J.B., Movable-anode tube gages surface roughness: Electronics, 26, p. 181-3. (November. 1953).

Carroll, R.E. and Gortz, N., Measurement of superimposed surface finishes: ASME Paper No. N53-F-29, 9p. (1953).

Koehler, W.F., Multiple-beam fringes of equal chromatic order. Part II. Mechanism of polishing glass: J.Opt.Soc.Am., 43, p. 743-7. (1953).

Lincoln, B., Elastic deformation and the laws of friction: Nature, 172, p. 169-70. (1953).

Peres, N.J.C., Geometrical considerations arising from the use of square wave calibration standards of surface finish: Aust. J. Appl. Phys., 4, p. 380-8. (September, 1953).

Sawyer, J.W., Method for recording roughness of submerged surfaces: Am. Soc. Nav. Eng. J., 65, p. 816-21. (November, 1953).

Slugg, R.E., Interferometer for examining polished surfaces: ASME Paper No.N53-S-6. (1953).

Underwood, A.F. and Bidwell, J.B., New instrument for roughness measurement: Mach. & Tool Blue Book, 49, p. 202-l5. (July, 1953).

Van Dam, H., A method of measuring surface quality in the workshop: Machy. (London), 83, p. 211-42. (July 31, 1953).

Walter, L., How to measure surface finish: Can. Machy., 64, p. 312-5. (December, 1953).

Wizke, F.W., ASA will simplify surface roughness measurements: Iron Age, 172, p. 180-2. (December 3, 1953).

Belk, J.A., Tolansky, S., and Turnbull, D., Uses of multilayer films for surface topography interferometry: J.Opt. Soc. Am., 44, p. 5-10. (1954).

Chaney, L. and Good, C.H., A re-evaluation of surface finish: A.S.M.E, Paper No. N54-A-192, 9p. (1954).

Dyson, J. and Hirst, W., The true contact area between solids: Proc. Phys. Soc., 67B, p. 309-12 (1954).

Field, R.H., Measurement of surface roughness: Can.Mach., 65, p. 125-6 and 268. (April, 1954).

Gary, M., Die konstruktion der mittleren Linie bei Oberflächenprofilen und einige Zusammenhänge zwischen den zur Kennzeichnung von Oberflächen benutzten grössen (approx.? Construction of the mean line from surface profiles and some relations between the most-used characteristics of surfaces): Z. Ang. Mail. Und. Phys., 5, p. 490-497 (1954).

Grube, W.L. and Rouze, S.R., Application of the two-beam interference microscope to the study of surfaces: J. Opt. Soc.Am., 44 p. 851-60. (November, 1954).

Halling, J., A reflectometer for the assessment of surface texture: J. Sci. Instrum., 31, 9, p. 318-20. (September, 1954).

Linnik, D.V., and Khusu, A.P., Mathematical-statistical description of ground surfaces (in Russian): Inzh. Zb. SSSR, v. 20, p. 46-57, 1954.

Lodge, A.S. and Howell, H.G., Friction of an elastic solid: Proc. Phys. Soc., B67, p. 89-97. (1954).

Reason, R.E., The trend of surface measurement: J.Inst.Prod.Engrs., 33, p. 263-76. (May, 1954).

Williams, K.R., and Daniels, S.G., The running-in of engines—Choice of cylinder bore finish: Proc. Auto. Div. IMechE, No. 4, p. 131-138, 1954.

## 1955

Dyson, J., Examining machined surfaces by interferometry: Engineering, 179, p. 274-6. (1955).

Halliday, J.S., Surface examination by reflection electron microscopy: Proc. I. Mech. E., 169, p. 777-81. (1955).

Koehler W.E. and White, W.C., Multiple-beam fringes of equal chromatic order.Part VI.Method of measuring roughness: J.Opt. Soc.Am., 45, p. 1011-4. (1955).

Menuelle, J., Surface roughness and design engineer: ASME Paper No. N55-S-11. (1955).

Pesante, M., A new instrument for measuring surface roughness: Microtecnic, 9, p. 27-31. (1955).

Rabinowicz, E., Rightmire, B.G., Tedholm, C.E. and Williams, R.E., The statistical nature of friction: Trans. ASME, 77, p. 981-4. (October, 1955).

Trowbridge, R.P., Recent developments in surface finish standards: Tooling & Production, 20, p. 9, 2, 16, 21, 24, 28 and 32. (March, 1955).

Walter, L., Modern methods for the measurement of metal surface finish: Metal Finishing J., 1, p. 168-76. (April, 1955).

Wright, P.J.F., A method of measuring the surface texture of aggregate: Concrete Research Magazine, November, p. 151-160, (1955).

Yoshimoto, G., Tsukizoe, T. and Kikuchi, S., The influence of surface roughness on the mechanism of contact between metal surfaces: Trans. Japan. Soc. Mech. Engrs., 21, p. 811-816 (1955).

Cartwright, D.E. and Longuet-Higgins, M.S., The statistical distribution of the maxima of a random function: Proc.Royal Soc., A 237, p. 212-32. (1956).

Good, C.H., A survey of surface finish inspection techniques: Steel Processing, 42, p. 641-4 and 648-50. (November, 1956).

Reason, R.E., Significance and measurement of surface finish: Grinding & Finishing, 2, p. 21-7. (September, 1956).

Reason, R.E., Significance and measurement of surface finish part 2, how transducers affect instrument performance, how to select proper cutoff values: Grinding & Finishing, 2, p. 32-6 and 41. (October, 1956).

Reason, R.E., Significance and measurement of surface finish, part 3 - conclusion. The interference method, roundness measurement, best use of reference standards: Grinding & Finishing, 2, p. 33-9. (November, 1956).

Sawyer, J.W., Comparator specimens assure good finishes: Steel, p. 112-3. (February 20, 1956).

Archard, J.F., Elastic deformation and the laws of friction: Proc.Royal Soc., A 243, p. 190-205. (1957).

Baker, C., Easier check on surface finish: Br.Steelmaker, 23, p. 312-3. (October, 1957).

Boeschoten, F. and Van der Held, E.F.M., The thermal conductance of contacts between aluminium and other metals: Physica XXIII, p. 37-44 (1957).

Engelhard, E., Precise interferometric measurement of gage blocks: Metrology of Gage Blocks, NBS Circular 581, p. 1-20. (1957).

Halliday, J.S., Application of reflection electron microscopy to the study of wear: Proc. of the Conf. on Lubrication and Wear, London, 1957, organised by the I. Mech. E., p. 647-51. (1957).

Kreisle, L.F., Predominant-peak surface roughness, a criterion for minimum hydrodynamic oil-film thickness of short journal bearings: Trans. ASME, 79, p. I235-41. (August, 1957).

Longuet-Higgins, M.S., The statistical analysis of a random, moving surface: Phil. Trans. Royal Soc., A 249, no. 966, p. 321-387. (1957).

Longuet-Higgins, M.S., Statistical properties of an isotropic random surface: Phil.Trans.Royal Soc., A 250, no. 975, p. 157-174. (1957).

Middleton, W.E.K. and Wyszecki, G., Colours produced by reflection at grazing incidence from rough surfaces: J.Opt.Soc.Am., 47, p. 1020-3. (1957).

Powell, R.W., Experiments using simple thermal comparator for measurement of thermal conductivity, surface roughness and thickness of foils or of surface deposits: J.Sci.Instrum., 34, p. 485-92. (December, 1957).

Strang, A.G., Surface characteristics of gage blocks: Metrology of Gage Blocks, NBS Circular 581, p. 87-97. (1957).

von Weingraber, H., Suitability of the envelope line as a reference standard for measuring roughness: Microtecnic, 11, p. 6-17. (1957).

Yoshimoto, G. and Tsukizoe, T., On the mechanism of wear between metal surfaces: Wear, 1, p. 472-90. (1957/58).

Bickel, E., Roughness standards today: Microtecnic, 12, p. 41-50. (1958).

Elmendorf, A. and Vaughan, T.W., A survey of methods of measuring smoothness of wood: Forest Products J., 8, p. 275-82. (1958).

Iwaki, A. and Mori, M., Factors of generating surface roughness in cutting: Bull.J.S.M.E., 1, 1, p. 86-95. (1958).

Iwaki, A. and Mori, M., On the distribution of surface roughness when two surfaces are pressed together: Bull. J.S.M.E., 1, 4, p. 329-37. (1958).

Lewis, K.G., Surface finish, metallurgical and mechanical aspects: Metal Treatment & Drop Forging, 25, p. 335-42 and 377-84. (1958).

Ling, F.F., On asperity distribution of metallic surfaces: J.Appl.Phys., 29, 8, p. 1168-74. (1958).

Ling, F.F., Some factors influencing the area-load characteristics for semismooth contiguous surfaces under static loading: Trans.ASME, 80, p. 1113-20. (July, 1958).

Spragg, R.C., The interdisciplinary nature of surface measurement: Eng. Maters. Handbook, Mantell ed., p. 32-39 (1958).

Timms, C., Measurement of large gears: Proc. of the Int. Conf. on Gearing, London, 1958, organised by the I. Mech. E., p. 269-76. (1958).

Zauder, F.A., Roughness-width cutoff is important in measuring surface finish: Tooling & Production, 24, p. 66-8. (October, 1958).

Ehrenreich, M., The slope of the bearing area as measure of the surface texture: Microtecnic, 13, p. 120-5. (1959).

Good, C.H., Surface specifications- their use and meaning: Tool Engr., 43, p. 77-80. (October, 1959).

Grimmer, F.D., Microscopes: Metal Treatment and Drop Forging, 26, p. 155-8 and 160. (1959).

Huffington, J.D., Theory of friction of polymers: Research (London), 12, p. 443-6. (1959).

Nanamura, T., The analysis of surface roughness curves (1st Report) Introduction: J. Soc. Proc. Eng. Japan, 25, 3, p. 56-62 (1959).

Nanamura, T., The analysis of surface roughness curves (2nd Report) The optical correlators and their utilisations: J. Soc. Proc. Eng. Japan, 25, 4, p. 110-117 (1959).

Ocvirk, F.W. and DuBois, G.B., Surface finish and clearance effects on journal-bearing load capacity and friction: Trans. ASME Ser. D. J. Basic Engng., 81, p. 245-53. (June, 1959).

Piper, B. and Callis, W.P., Surface-finish measurement on non-ferrous materials: Am.Mach., 103, p. 103-20. (August, 1959).

Swing, E., Cast surfaces evaluation for roughness standards: Modern Castings, 35, p. 98-102. (May, 1959).

Yamasita, S., On the influences of the surface of metallic plate upon the abrasion of metals to the fluid with sand particles: Bull J.S.M.E., 2, p. 29-34. (February, 1959).

Young, A.P. and Clegg, B.H., Replica method for examining surface profiles: Rev.Sci.Instrum., 30, p. 444-6. (June, 1959).

## 1960

Almassy, G., A microwave of measuring surface roughness: Periodica Polytechnica Elec. Eng., 4 p. 17-29. (1960).

Bickel, E., Testing the precision of electric instruments for the measurement of surface roughness: Microtecnic, 14, p. 149-59. (August, 1960).

De Vries, W.M., The geometrical definition and evaluation of surface roughness in the M-system: Microtecnic, 14, p. 23-4. (February, 1960).

Huffington, J.D., A theory of friction involving a microtopographical deformation index: Wear, 3, 6, p. 473-6. (November/ December, 1960).

Jagger, E.T., Effect of cylinder surface finish on the performance of hydraulic packings: Paper from Second European Fluid Power Conference, London, 27 April 1960.

Kienzle, O., Contribution to the typology of formed metal surfaces: Microtecnic, 14, p. 118-24. (June, 1960).

Kienzle, O., Genauigkeitsansprüche des Konstrukteurs und ihre Verwirklichung durch die Fertigung (Accuracy requirements of the technical designer and their implementation by manufacturing): Industrieanzeiger (The Industrial Indicator), v. 82, no. 62, p. 26-42. (1960).

Kragelskii, I.V. and Demkin, N.B., Determination of the true contact area: Friction & Wear in Machinery, 14, p. 30-53. (1960).

Kragelsky, I.V. and Demkin, N.B., Contact area of rough surfaces: Wear, 3, 3, p. , 170-87. (May/June, 1960).

Ostrovskii, M.S. and Andreevskii, V.M., Influence of surface roughness on the development of fretting in butt joints: Machines & Tooling, 44, 2, p. 30-2. (1960).

Reason, R.E., The measurement of surface texture: Modern workshop technology, 2 - processes Ed. Baker, H.W., Macmillan Ltd., London. Ch.23, p. 585-634. (1960).

Tolansky, S., Surface Microtopography: Longmans, London. (1960).

Van Hasselt, R., Calculation of the CLA roughness height from a profile: Microtecnic, 14, p. 113-7. (June, 1960).

Archard, J.F., Single contacts and multiple encounters: J. Appl. Phys., 32, 8, p. 1420-5. (1961).

Bennett, H.E. and Porteus, J.O., Relation between surface roughness and specular reflectance at normal incidence: J.Opt. Soc. Am., 51, p. 123-9. (1961).

Haesing, J., Determining surface finish of workpieces by means of surface standards: Microtecnic, 15, p. 24-8. (February, 1961).

Jagger, E.T., Rotary shaft seals.Some effects of shaft surface finish: Br. Hydro. Res. Assoc., Reprint Paper A1, Ref. 1034/5/67 (1961).

Nara, I., Two dimensional representation of surface roughness: CIRP Annals, no. 1. (1961).

Rubert, M.P., Assessment of surface finish by means of surface roughness scale: Machy. (London), 98, p. 142-147. (June, 1961 ).

## 1962

Burton, R.A., Effects of two-dimensional sinusoidal roughness on the load support characteristics of a lubricant film: ASME Paper No.62-LUBS-1, 5p. (1962).

Cunningham, G.W. and Spretnak, J.W., A study of the effect of applied pressure on surface contact area: Int. J. Mech. Sci., 4, p. 231-40. (1962).

Dawson, P.H., Effect of metallic contact on the pitting of lubricated rolling surfaces: J.Mech.Engng.Sci., 4, 1, p. l6-21. (March, 1962).

Huffington, J.D., Method for the measurement of surface microtopography, experiments with gelatine models: Brit. J. Appl. Phys., 39, p. 38-40. (1962).

Jones, P.F., The accuracy of surface roughness assessment: Microtecnic, 16, p. 105-11. (June, 1962).

Lackenby, H., The resistance of ships, with special reference to skin friction and surface condition: I. Mech. E., Paper No. L4/62. Proc. I. Mech. E., 176, p. 981-1014. (1962).

Longuet-Higgins, M.S., The statistical geometry of random surfaces: Proc. of the 13th Symp. on Appl. Maths, Amer.Maths.Soc., p. 105-43. (1962).

Molgaard, J., A coefficient of friction which increases with increasing load. Results with undrawn nylon monofilaments, and a theoretical explanation: Proc. Phys. Soc., 79, p. 516-34. (1962).

Myers, N.O., Characterization of surface roughness: Wear, v. 5, no. 3, p. l82-189. (May/June, 1962).

O'Connor, J.J. and Johnson, K.L., The role of surface asperities in transmitting tangential forces between metals: ASME Paper No. 62-LUBS-14, 12p. (1962).

Tolansky, S., Surface microtopography: Int.Sci. & Technol., p. 32-9. (September, 1962).

Veerman, C.C., Registration and mapping of plastically deformed metal surfaces by means of photoelectrons: Mate.Sci. Eng., 4, p. 329-42. (1962).

Barash, M.M., Measuring the finish of rough surfaces: Int. J. Mach. Tool Des. Res., 3, p. 97-100. (1963).

Beckmann, P. and Spizzichino, A., The scattering of electromagnetic waves from rough surfaces: Pergamon Press, Oxford, U.K. (1963).

Bennett, H.E., Specular reflectance of aluminized glass and the height distribution of surface irregularities: J.Opt. Soc.Am., 53, p. 1389-94. (1963).

Bickel, E., Some fundamental problems in the measurement of surface roughness: Proc. of the Int. Prod. Eng. Res. Conf., Pittsburgh, U.S.A., September, 1963, 8, p. 667-74. (1963).

Courtel, R., The relationship of surface finish to physical and functional behaviour: Proc. of the Int.Prod.Eng.Res.Conf., Pitttsburgh, U.S.A., September, 1963, 8, p. 675-83. (1963).

Davies, M.G., The generation of pressure between rough, fluid lubricated, moving, deformable surfaces: Lubr.Engng., 19, 6, p. 246-52. (June, 1963).

de Vries, W.M. and Waalre, A., Surface roughness standards: Proc. of the Int.Prod.Eng.Res.Conf., Pittsburgh, U.S.A., September, 1963, 8, p. 684-90. (1963).

Finkln, E.F., Surface roughness in wear: Wear, 6, 4, p. 293-302. (July/ August, 1963).

Furey, M.J., Surface roughness effects on metallic contact and friction: A.S.L.E. Trans., 6, 1, p. 49-59. (January, 1963).

Martin, F.A., Minimum allowable oil film thickness in steadily loaded journal bearings: Proc. of the Second Convention on Lubication and War, Eastbourne, UK, Proc. I.Mech.E., 178, Part 3N, p. 161-7. (1963/64).

Olsen, K.V., The standardization of surface roughness: Proc. of the Int. Prod. Eng. Res.Conf., Pittsburgh, U.S.A., September, 1963, 8, p. 655-8. (1963).

Porteus, J.O., Relation between the height distribution of a rough surface and the reflectance at normal incidence: J.Opt.Soc. Am., 53, p. 1394-402. (1963).

Reason, R.E., The stylus method of surface measurement: Proc. of the Int. Prod. Eng. Res.Conf., Pittsburgh, PA, September, 1963, 8, p. 694-9. (1963).

Shaw, M.C. and Peklenik, J., A light projection technique for studying surface topology: Ann. C.I.R.P., 12, p. 93-7. (1963).

Swing, E., Methods of surface roughness measurement: Modern Castings (New

Technology), 44, p. 454-64. (September, 1963).

Tipei, N., Effects of the microgeometry of surfaces on lubrication.I. The two-dimensional problem: Rev.Mech.Appl. 8, 6, p. 981-96. (1963).

von Weingraber, H., Optical methods for surface finish evaluation: Proc. of the Int.Prod.Eng.Res.Conf., Pittsburgh, U.S.A., September, 1963, 8, p. 659-66. (1963).

# 1964

Arrmand, G., Lapujoulade, J. and Paigne, J., A theoretical and experimental relationship between the leakage of gases through the interface of two metals in contact and their superficial microgeometry: Vacuum, p. 53-7. (1964).

Bennett, H.E., Measurement of smooth surface finishes: Industrial Quality Control, p. 18-23. (February, 1964).

Bowden, F.P. and Tabor, David, The friction and lubrication of solids. Part 2: Oxford University Press, U.K. 544p. (1964).

D'yachenko, P.E., Tolkacheva, N.N., Andreev, G.A. and Karpova, T.M., The Actual Contact Area Between Touching Surfaces: Consultants Bureau (transl.), New York. 71p. (1964).

Henry, J.J. and Fenech, H., The use of analog computers for determining surface parameters required for prediction of thermal contact conductance: Trans. A.S. M.E. Ser. C. J.Heat Transfer, 86, 4, p. 543-51. (November, 1964).

Huffington, J.D., A study of the microtopography of some surfaces by means of a friction technique: Proc.Royal.Soc., A 279, p. , 61-9. (1964).

Kubo, M., Measurement and analysis of surface roughness based on the information theory: Acta Imeko, p. 115-27. (1964).

McAdams, H.T., The role of topography in the cutting performance of abrasive tools: Trans. ASME Ser.B. J.Engng. for Ind., 86, p. 75-82. (February, 1964).

McAdams, H.T., Markov chain models of grinding profiles: Trans. ASME Ser. B. J. Engng. for Ind., 86, 4, p. 383-8. (November, 1964).

Peklenik, J., Contribution to the correlation theory for the grinding process: Trans.ASME Ser.B. J.Engng.for Ind., 86, 2, p. 85-94. (May, 1964).

Pesante, M., Determination of surface roughness typology by means of amplitude density curves: Ann. C.I.R.P. 12, 2, p. 61-8. (1964).

Reason, R.E., The application of an electronic computer to the study of surface measurement: Automatisme, 9, 5 (May 1964).

Rubert, M.P., The importance of surface finish control: Proc. of the 5th Int. Machine Tool Des. & Res.Conf., Birmingham, U.K., September, 1964, p. 199-210. (1964).

Tallian, T.E., Chiu, Y.P., Huttenlocher, D.F., Kamenshine, J.A., Sibley, L.B. and Sindlinger, N.E., Lubricant films in rolling contact of rough surfaces: A.S.L.E. Trans., 7, 2, p. 109-26. (April, 1964).

Barkan, P. and Tuohy, E.J., A contact resistance theory for rough hemispherical silver contacts in air and in vacuum: Trans. I.E.E.E. PAS-84, p. 1132-43. (1965).

Christensen, H., Nature of metallic contact in mixed lubrication: Proc. Instn. Mech. Engrs., 180, Pt.3B (1965-66).

Dorinson, A., Microtopography of finely ground steel surfaces in relation to contact and wear: A.S.L.E. Trans., 8, 2, p. 100-8. (April, 1965).

Eberhardt, H.W., How rough the surface?: Prod. Engng., (U.S.A.), v. 36, p. 105-7. (August, 1965).

Gabe, D.R., Methods of measuring surface roughness: Metallurgia, 72, p. 47-52. (1965).

Greenwood, J.A. and Rowe, G.W., Deformation of surface asperities during bulk plastic flow: J.Appl.Phys., 36, p. 667-8. (1965).

Hamilton, D.B., Walowit, J.A, and Allen, C.M., A theory of lubrication by microirregularities: ASME Paper No. 65-Lub-11. 9p. (1965).

Kragelskii, I.V., Friction and Wear: Butterworths, London, (1965).

Kubo, M., Instrument for the measurement of slope and height distribution of surface roughness: Rev.Sci.Instrum., 36, p. 236-7. (1965).

Miller, E.F. and Lash, J., Those conflicting surface specs: Am. Machinist/ Metalworking Mfg., 109, p. 72-3. (April, 1965).

Miyazaki, K., Electronic method, based on the surface of a liquid, for measuring flatness: Microtechnic, 19, p. 74-6. (1965).

Moore, D.F., Drainage criteria for runway surface roughness: J. Roy. Aeronaut. Soc., 69, p. 337-42. (1965).

Nakayama, Y. and Endo, H., Roughness tester using diaphragm type air-micrometer: Bull. J.S.M.E., 8, 31, p. 468-75. (August, 1965).

Rabinowicz, E., Friction and wear of materials: John Wiley, New York, 244p. (1965).

Reason, R.E., Some approaches to measurement of waviness: Proc. of the 6th Int. Machine Tool Des. & Res. Conf., Manchester, U.K., September, 1965 p. 293-9. (1965).

Roberts, G.A., The sign language of surface finish: Am. Machy/ Metalworking Mfg., 109, p. 78-80. (1965).

Ross, T.K. and Badhwar, R.K., The effect of surface roughness upon electrochemical processes: Corrosion Science, 5, p. 29-38. (1965).

Tallian, T.E., Brady, E.F., McCool, J.I. and Sibley, L.B., Lubricant film thickness and wear in rolling point contact: A.S.L.E. Trans., 8, 4, p. 411-24. (October, 1965).

Tallian, T.E., McCool, J.I. and Sibley, L.B., Partial elastohydrodynamic lubrication in rolling contact: Symp. on Elastohydrodynamic Lubrication, Leeds, Proc.I. Mech. E., 180, Part 3B, p. 169-84. (1965/66).

Thomas, T.R. and Probert, S.D., Thermal resistance of pressed contacts: UK Atomic Energy Auth., Risley, Warrington, Lancs., TRG Report 1013 (R/X) (1965).

Thornley, R. H., Connolly, R., Barash, M.M. and Koenigsberger, F., The effect of surface topography upon the static stiffness of machine tool joints: Int.J.Mach.Tool Des.Res., 5, p. 57-74. (1965).

Tsukizoe, T. and Hisakado, T., On the mechanisms of contact between metal surfaces - the penetrating depth and the average clearance: Trans. ASME Ser. D. J. Basic.Engng., 87, 3, p. 666-74. (September, 1965).

Whitehouse, D.J. and Reason, R.E., The equation of the mean line of surface texture found by an electric wave filter: Rank Precision Industries, Leicester, U.K., Report, 37p. (1965).

# 1966

Ajioka, S., Dynamic response of stylus: Bull. Japan.Soc.Precision Engng., 1, 4, p. 228-33. (March, 1966).

Estill, W.B. and Moody, J.C., Deformation caused by stylus tracking on thin gold film: I.S.A. Trans., 5, p. 373-8. (1966).

Greenwood, J.A., Constriction resistance and the real area of contact: Brit. J. Appl. Phys., 17, p. 1621-1632 (1966).

Greenwood, J.A. and Williamson, J.B.P., Contact of nominally flat surfaces: Proc. Royal Soc. A 295, p. 300-319. (1966).

Hahn, R.S. and Lindsay, R.P., Some factors affecting surface finish in grinding: Ann. C.I.R.P. 14, p. 47-52. (1966).

Halling, J. and Brothers, B.G., The effect of surface finish on the creep and wear of a rolling ball subjected to normal and tangential surface tractions: Wear, 9, 3, p. 199-209. (May./June, 1966).

Hasunuma, H., Statistical characteristics of surface profile: Bull. Japan. Soc. Precision Engng., 1, 4, p. 205-11. (March, 1966).

Iwaki, A. and Mori, M., Rough surface and positioning of the surface: Bull. Japan. Soc. Precision Engng., 1, 4, p. 294-9. (March, 1966).

Kamnev, V.V., Integral evaluation of surface roughness: Meas. Tech., 2, p. 261-3. (1966).

Kimura, Y., An analysis of distribution of contact points through the use of surface profiles: J. Japan. Soc. Lub. Eng., 11, p. 467-473 (1966).

Kubo, M., Instruments for statistical analysis of surface roughness: Bull. Japan.Soc.Precision Engng., 1, 4, p. 255-61 (March, 1966).

Makino, H., Roughness of finished surface in grinding operation of hardened steel: Bull. Japan.Soc.Precision Engng., 1, 4, p. 281-6. (March, 1966).

Marcus, A.H., Application of a statistical surface model to planetary radar astronomy: J.Geophysical Res., 74, p. 4958-62, (19669).

Meyer, R.N. and Wu, S.M., Optical contour mapping of cutting tool crater wear: Int.J.Mach.Tool Des.Res., 6, p. 153-70. (1966).

Nakamura, T., On deformation of surface roughness curves caused by finite radius of stylus and tilting of stylus holder arm: Bull. Japan.Soc.Precision Engng., 1, 4, p. 240-8. (March 1966).

Nara, J., On CLA value obtained with direct reading surface roughness testers - effects of skid and high pass filter: Bull. Japan. Soc.Precision Engng., 1, 4, p. 263-73. (March 1966).

O'Donoghue, J.P. and Cameron, A., Friction and temperature in rolling sliding contacts: A.S.L.E. Trans., 9, p. 186-94. (1966).

Oonishi, Y., Measurement of bearing curves of surface profiles: Bull. Japan. Soc.Precision Engng., 1, 4, p. 249-54. (March 1966).

Rubert, M.P., Contradictions in surface roughness measurement: Proc. of the 7th Int.Machine Tool Des. & Res., Univ. of Birmingham, U.K., September, 1966, p. 529-36. (1966).

Sata, T and Kubo, M., On forming of surface roughness in finishing processings: Bull., Japan Soc. of Prec. Eng., 1, 4, p. 287-293 (1966).

Schloss, M., Quantifying terrain roughness on lunar and planetary surfaces: J. Spacecraft, 3, p. 283-5. (1966).

Schwartz, N. and Brown, R., A stylus method for evaluating the thickness of thin films and substrate surface roughness: Trans. of the 8th National Vacuum Symp., p. 836-45. (1966).

Takeyama, H. and Ono, T., Study on roughness of turned surfaces: Bull. Japan.Soc.Precision Engng., 1, 4, p. 274-9. (March 1966).

Tanaka, S., Egawa, M. and Yajima, N., Newly designed roughness measuring instrument: Bull. Japan.Soc.Precision Engng., 1, 4, p. 221-7. (March 1966).

Thomas, T.R. and Probert, S.D., Thermal contact of solids: Chem. & Proc. Eng. (November 1966).

Tipei, N. and Pascal, H., Micro - and Macrogeometry effects on pressures in three-dimensional lubrication 1.Plane surfaces: Rev. Roum. Sci. Tech. Mec. Appl. 11, p. 699-707. (1966).

von Weingraber, H., Die Prüfung mechanischer Profilschnittgeräte mit rauhwertanzeige und/oder profilaufzeichnung (checking mechanical profile section devices by approx. (?) displays and/or profile recording): Annals of CIRP, 13, p. 217-226 (1966).

Wada, H., On the oblique incidences type micro-interferometry: Bull. Japan. Soc.Precision Engng., 1, 4, p. 234-9. (March 1966).

Yamamoto, K., Recent development of surface roughness measurement in Japan: Bull. Japan.Soc.Precision Engng., 1, 4, p. 212-20. (March 1966).

## 1967

Andrew, C., Cockburn, J.A. and Waring, A.E., Metal surfaces in contact under normal forces, some dynamic stiffness and damping characteristics: Conf. on Properties & Metrology of Surfaces, Oxford.Proc.I.Mech.E., 182, Part 3K. p. 92-100. (1967/68).

Anon: Surface roughness - A new yardstick: Iron Age 199, p. 69. (1967).

Barwell, F.T., Tribological implications of surfaces: Conf. on Properties & Metrology of Surfaces, Oxford.Proc.I.Mech.E., 182, Part 3K, p. 1-20. (1967/68).

Bowden, F.P. and Tabor, David, Friction and lubrication: Methuen & Co. Ltd., London, U.K. 166p. (1967).

Broadston, J.A., Education for surface texture assessment: Conf. on Properties & Metrology of Surfaces, Oxford.Proc.I.Mech.E., 182, Part 3K, p. 466-72. (1967/68).

Butler, R.D. and Pope, R.J., Surface roughness and lubrication in sheet metal working: Conf. on Properties & Metrology of Surfaces, Oxford, Proc. I. Mech. E., 182, Part 3K, p. 162-70. (1967/68).

Chaplin, P.D., The analysis of hull surface roughness records: European Shipbuilding, 16, p. 40-7. (1967).

Connolly, R. and Thornley, R.H., Determining the normal stiffness of joint faces: ASME Paper No. 67-Prod-6, 10p. (1967).

Crabtree, J.J., Surface metrology in production engineering researcb: Conf. on Properties & Metrology of Surfaces, Oxford.Proc.I.Mech.E., 182, Part 3K, p. 216-28. (1967/68).

Dickinson, G.R., A survey of factors affecting surface finish: Conf. on Properties & Metrology of Surfaces, Oxford.Proc.I.MechE., 182, Part 3K, p. 135-47. (1967/68).

Dowson, D. and Whomes, T.L., Effects of surface quality upon the traction characteristics of lubricated cylindrical contacts: Proc.I.Mech.E., 182, part 1, p. 292-9. (1967/68).

Dunin-Barkovsky, I.V., Analysis of surface irregularities by the spectral method: Conf. on Properties & Metrology of Surfaces, Oxford.Proc.I.Mech.E., 182, Part 3K, p. 211-5. (1967/68).

Dupuy, O., High-precision optical profilometer for the study of micro-geometrical surface defects: Conf. on Properties & Metrology of Surfaces, Oxford.Proc.I.Mech.E., 182, Part 3K, p. 255-9. (1967/68).

Eberle, O.A., A graphical method for statistical assessment of surface roughness comparison specimens: Conf. on Properties & Metrology of Surfaces, Oxford.Proc.I.Mech.E., 182, Part 3K. p. 368-96. (1967/68).

Farmer, D.A., Brecker, J.N. and Shaw, M.C., Study of the finish produced in surface grinding: Conf. on Properties & Metrology of Surfaces, Oxford.Proc. I.Mech.E., 182, Part 3K, p. 171-9. (1967/68).

Field, J.E., The nature and topography of surfaces produced by fracture: Conf. on Properties & Metrology of Surfaces, Oxford.Proc.I.Mech.E. 182, Part3K, p. 70-80. (1967/68).

Fogg, B., A preliminary study of the influence of stress and deformation in the substrate on junction growth and friction: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I. Mech. E., 182, Part 3K, p. 152-61. (1967/68).

Furuya, Y. and Fujita, H., Effect of surface roughness on the velocity defect law: Phys. of Fluids, 10, 9 part 2, p. S155-S156. (September, 1967).

Green, E., A review of surface texture measurement and the associated metrological problems: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K, p. 330-43. (1967/68).

Greenwood, J.A., The area of contact between rough surfaces and flats: Trans. ASME, Ser.F., J.Lubr.Tech., 89, 1, p. 81-91. (January, 1967).

Greenwood, J.A., Surface measurement: Symp. on Experimental Methods In Tribology, London, Proc.I.Mech.E., 182, Part 3G, p. 1-6. (1967/68).

Greenwood, J.A. and Tripp, J.H., The elastic contact of rough spheres: Trans. ASME, Ser.E., J.Appl.Mech., 34, 2, p. 153-9. (March, 1967).

Gribovszki, L., The connection between surface quality and processing: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K p. 46-55. (1967/68).

Hydell, R.R., Peak to valley surface roughness control now: S.A.E. Paper No. 670031, 9p. (1967).

Hydell, R.R., Today's need - functional surface roughness control: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K p. 127-34. (1967/68).

Isaev, A.I., Influence of the rigidity of the machine-workpiece-tool system on the roughness of machined surface: Proc. of the 8th Int.Machine Tool Des. & Res. Conf., Manchester, U.K., September, 1967 p. 75-81. (1968).

Jefferis, J.A. and Johnson, K.L., Traction in elastohydrodynamic contacts, first paper—sliding friction between lubricated rollers: Proc.I.Mech.E., 182, part 1, p. 281-91. (1967/68).

Keller, B.E., Non-contact surface contour analyser: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K, p. 360-7. (1967/68).

Kivel, J., Application of radio isotopes for surface area and roughness measurements: Isotopes & Radiation Tech., 5, p. 112-7, (W inter, 1967/68).

Lukjanov, V.S., Specimens used for checking contact profile recording instruments and M-system profile meters and certification of specimens: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K, p. 406-15. (1967/68).

Marcus, A.H., Statistical model of a flooded random surface and applications to lunar terrain: J.Geophysical Res., 72, p. 1721-6. (1967).

Mitchell, L.A. and Rowe, M.D., An assessment of face seal performance based on the parameters of a statistical representation of surface roughness: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech. E., 182, Part 3K, p. 101-7. (1967/68).

Nakayama, K. and Shaw, M.C., Study of the finish produced in surface grinding: Conf. on Properties & Metrology of Surfaces, Oxford. Proc. I. Mech. E., 182, Part 3K, p. 179-94. (1967/68).

Opitz, H., An investigation of the behaviour of sliding surfaces of machine tools: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K, p. 473-86. (1967/68).

Panda, B.C., A new method of testing the surface finish of a metal: A.S.M.E. Paper No.67-WA/PROD-13, 3p. (1967).

Peklenik, J., Investigation of surface typology: Ann. C.I.R.P. 15, p. 381-5. (September, 1967).

Peklenik, J., New developments in surface characterization and measurements by means of random process analysis: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K, p. 108-26. (1967/68).

Quiney, R.G., Austin, F.R. and Sargent, L.B., The measurement of surface rougbness and profiles on metals: A.S.L.E., Trans. 10, 2, p. 193-202. (April, 1967).

Reason, R.E., The workshop requirements of surface measurement: Conf. on Properties & Metrology of Surfaces, Oxford, Proc.I.Mech.E., 182, Part 3K, p. 299-305. (1967/68).

Reason, R.E. and Spragg, R.C., Measurement of surface topography in the field of rolling and deep drawing: Sheet Metal Ind., 44, p. 323-9. (May, 1967).

Richards, P.J., A review of methods of measurement and assessment of surface form and texture: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K, p. 453-65. (1967/68).

Rubert, M.P., Surface roughness assessment by tactile comparison: Machine Shop and Engineering Manufacture, 28, p. 54-60. (1967).

Rubert, M.P., Functional assessment of surface roughness: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K, p. 350-9. (1967/68).

Russel, A. and McFarlane, D.M., A peak counter for surface texture measurement: Conf. on Properties & Metrology of Surfaces, Oxford. Proc. I. Mech. E., 182, Part 3K, p. 327-9. (1967/68).

Sadowski, A., Trends and actual state of Polish scientific research work in the field of surface metrology: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K, p. 229-40. (1967/68).

Scarr, A.J., Use of the least squares line and plane in the measurement of straightness and flatness: Proc.I.Mech.E., 182, part 1, p. 531-5. (1967-68).

Schofield, R.E. and Thornley, R.H., Mathematical expression of surface finish characteristics: Conf. on Properties & Metrology of Surfaces, Oxford. Proc. I. Mech. E., 182, Part 3K, p. 446-52. (1967/68).

Scott, D., Surface studies in the investigation of failure mechanisms: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K, p. 56-64. (1967/68).

Sharman, H.B., Calibration of surface texture measuring instruments: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K, p. 319-26. (1967/68).

Sharman, H.B., The influence of sample size and the relationships between the common surface texture parameters: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K, p. 416-24, (1967/68).

Sherwood, K.F. and Crookall, J.R., Surface finish assessment by an electrical capacitance technique: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I. Mech. E., 182, Part 3K, p. 344-9. (1967/68).

Silin, R.I. and Frederick, J.R., Instrumentation for the analysis of the profile of machined surfaces: Ann. C.I.R.P., 15, p. 295-300. (1967).

Spragg, R.C., The accurate calibration of surface texture and roundness measuring instruments: Conf. on Properties & Metrology of Surfaces, Oxford, Proc.I.Mech.E., 182, Part 3K, p. 397-405, (1967/68).

Tallian, T.E., On competing failure modes in rolling contact: A.S.L.E. Trans., 10, 4, p. 418-39. (October, 1967).

Tallian, T.E., Rolling contact failure control through lubrication: Conf. on Lubrication & Wear, Fundamentals & Application to design, London. Proc.I. Mech. E., 182, Part 3A, p. 205-36. (1967/68).

Tarasov, L.P., Same surface roughness - by different methods: Grits & Grinds, 58, p. 5-8. (1967).

Tipton, H. and Roberts, J.I., New optical method of assessing surface quality: Conf. on Properties & Metrology of Surfaces, Oxford. Proc. I. Mech. E., 182, Part 3K, p. 274-8. (1967/68).

Trumpold, H., Limits of applications of the interference methods for surface measurements: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K, p. 241-54. (1967/68).

Tzeng, S.T. and Saibel, E., Surface roughness effect on slider bearing lubrication: A.S.L.E. Trans., 10, 3, p. 334-8. (July, 1967).

Van Deusen, B.D., A statistical technique for the dynamic analysis of vehicles traversing rough yielding and non-yielding surfaces: NASA Report No.CR-659, 48p. (1967).

Van Deusen, B.D and McCarron, G.E., A new technique for classifying random surface roughness: S.A.E. Paper No. 670032, 11p. (1967).

Wager, J.G., Surface effects in pneumatic gauging: Int.J. Mach. Tool Des. Res., 7, p. 1-14. (1967).

Westberg, J., Development of objective methods for judging the quality of ground and polished surfaces in production: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K, p. 260-73. (1967/68).

Whitehouse, D.J., An improved type of wave filter for use in surface finish measurement: Conf. on Properties & Metrology of Surfaces, Oxford. Proc. .Mech., 182, Part 3K, p. 306-18. (1967/68).

Williamson, J.B.P., The microtopography of surfaces: Conf. on Properties & Metrology of Surfaces, Oxford. Proc. I. Mech. E., 182, Part 3K, pp. 21-30. (1967/68).

Wolff, H., Surface testing using the Hommel tester type T: Conf. on Properties & Metrology of Surfaces, Oxford.

Proc.I.Mech.E., 182, Part 3K, p. 279-98. (1967/68).

Wolff, H., Ein zählgerät für die oberflächenprüfung (a counting device for surface checking: Z. Instr., 75, p. 280-290 (1967).

Yhland, E., Waviness measurement - an instrument for quality control in rolling bearing industry: Conf. on Properties & Metrology of Surfaces, Oxford. Proc.I.Mech.E., 182, Part 3K, p. 438-45. (1967/68).

Yip, F.C. and Venart, J.E.S., Surface topography effects in the estimation of thermal and electrical contact resistance: Conf. on Properties & Metrology of Surfaces, Oxford. Proc. I.Mech.E., 182, Part 3K, p. 81-91. (1967/68).

## 1968

Anno, J.N., Walowit, J.A. and Allen, C.M., Microasperity lubrication: Trans. ASME Ser. F. J. Lubr.Tech., 90, 2, p. 351-5. (April, 1968).

Barker, K., Kaliszer, H. and Rowe, G.W., Topography and mechanical properties of ground metal surfaces: IMechE, 182, 3K (1968).

Ber, A. and Braun, S., Spectral analysis of surface finish: Ann. C.I.R.P., 16 p. 53-9. (1968).

Ber, A. and Yarnitzky, Y., Functional relationship between tolerances and surface finish: Microtecnic, 22, p. 449-51. (1968).

Busch, T., Lets clean up the mess in surface measurement: Tool & Manufacturing Eng., 60, p. 54-9. (January, 1968).

Chinick H.P., LVDT puts precision in surface texture measurement: Cutting Tool Engng., 20, p. 13. (March, 1968).

Edwards, C.M. and Halling, J., An analysis of the plastic interaction of surface asperities and its relevance to the value of the coefficient of friction: J.Mech.Engng.Sci., 10, 2, p. 101-10. (April, 1968).

Edwards, C.M. and Halling, J., Experimental study of the plastic interaction of model surface asperities during sliding: J.Mech.Engng.Sci., 10, 2, p. 121-32. (April, 1968).

Finkin, E.F., A discrete-continuum approach to the solution of the contact of rotating circular surfaces: ASME Paper 68-Lub-13, 3p. (1968).

Finkin, E.F., The bearing area of surfaces: Trans. ASME Ser. F.J. Lubr. Tech., 90, 1, p. 329-30. (January, 1968).

Grieve, D.J., Kaliszer, H. and Rowe, G.W., The effect of cutting conditions on bearing area parameters: Proc. of the 9th Int. Machine Tool Des. & Res. Conf., Birmingham, U.K., September, 1968, 2, p. 989-1004. (1969).

Harada, S. and Mano, K., The effects of surface roughness on contact resistance of sphere-plane contact: Proc. 4th Int.Res.Symp. Electric Contact Phenomena, Chicago, U.S.A., November, 1968, organised by Illinois Inst. of Technol. p. 25-8. (1968).

Huffington, J.D., The frictional method of measuring contact area between surfaces and its relation to the surface microtopography of some abraded metals and polymers: Wear, 12, 5, p. 343-56.(November, 1968).

Jones, M.H., Howells, R.I.L. and Probert, S.D., Solids in static contact: Wear, 12, 4, p. 225-40.(October, 1968).

Kubo, M. and Peklenik, J., An analysis of micro-geometrical isotropy for random surface structures: Ann. C.I.R.P., 16, p. 235-42. (1968).

McAdams, H.T., Picciano, L.A. and Reese, P.A., A computer method for hypsometric analysis of abrasive surfaces: Proc. of the 9th Int. Machine Tool Des. & Res. Conf., Birmingham, U.K., September, 1968, 2, p. 1149-72. (1968).

Moody, J.C., Measurement of ultrafine surface finishes: I.S.A. Trans. 7, p. 67-71. (1968).

Peklenik, J. and Kubo, M., A basic study of a three-dimensional assessment of the surface generated in a manufacturing process: Ann. C.I.R.P., 16, p. 257-65. (1968).

Ribbens, W.B. and Lazik, G.L., Use of optical data processing techniques for surface roughness studies: Proc. I.E.E.E. (Letters).56, p. 1637-8. (1968).

Sabey, B.E., Wet road skidding resistance at high speeds on a variety of surfaces on A1: Road Research Laboratory, Ministry of Transport, RRL Rep. LR.131 (1968).

Snoeys, R. and Wang, I.-C., Analysis of the static and dynamic stiffnesses of the grinding wheel surface: Proc. of the 9th Int. Machine Tool Des.& Res. Conf., Birmingham, U.K., September, 1968, 2, p. 1133-48.(1969).

Spellman, E., Optical measurement of surface geometry: Proc. Am. Soc. Abrasive Methods Nat. Tech. Conf., Philadelphia, U.S.A., March, 1968, p. 66-9. (1968).

Tallian, T.E. and McCool, J.I., The observation of individual asperity interactions in lubricated point contact: A.S.L.E. Trans., 11, 2, p. 176-90. (April, 1968).

Tsaò, K.C., Husein, A.B. and Wu, S.M., Cutting tool crater wear measurement by the lapping-comparator technique: Int.J. Mach. Tool Des.Res., 8, p. 15-26. (1968).

Tsukizoe, T. and Hisokado, T., On the mechanism of contact between metal surfaces, Part 2 - the real area and the number of the contact points: Trans. ASME Ser. F. J. Lubr.Tech., 90, 1, p. 81-88. (January, 1968).

Wallach, J., Hawley, J.K., Moore, H.B., Rathben, F.V. and Gitzendanner, L.G., Calculation of leakage between metallic sealing surfaces: ASME Paper 68-LUB-15, 12p. (October 8-10, 1968).

Williamson, J.B.P., Physical aspects of a surface: A S.T.M.E. Paper No. EM68-513, 15p. (1968).

Williamson, J.B.P., Topography of solid surfaces: In, Interdiciplinary approach to friction and wear, Ku, P.M. (Ed). NASA SP-181, p. 85-142. (1968).

Williamson, J.B.P. and Hunt, R.T., Relocation profilometry: J. Phys. E. Sci. Instrum., 1, 7, p. 749-52. (July, 1968).

Yoshikawa, H. and Sata, T., Simulated grinding process by Monte Carlo method: Ann. C.I.R.P., 16, p. 297-302. (1968).

Young, A.W., Factors concerning surface geometry: A.S.T.M.E. Paper No. IQ68-805, 80p. (I968).

## 1969

Adkins, H., A look at surface finish: Am.Mach., 113, 18, p. 111-6. (September, 1969).

Anderson, W.L., Surface roughness studies by optical processing methods: Proc. I.E.E.E.,(Letters), 57, p. 95. (1969).

Anon: Fibre optics take closer look at surface finish: Metalworking Production, 133, p. 33-4. (1969).

Becker, H.J., Sources of error in comparative surface roughness measurement and their elimination in practice.Part 1: TZ Prakt. Metallbearb., 63, p. 233-236 (1969).

Christensen, H., Stochastic models for hydrodynamic lubrication of rough surfaces: Proc.I.Mech.E., 184, p. 1013-25. (1969/70).

Cooper, M.G., Mikic, B.B., and Yovanovich, M.H., Thermal contact conductance: Int.J.Heat Mass Transfer. 12, p. 279-300. (1969).

Daniel, H.G., A study of abrasive blasted surfaces and their effect on paint thickness: Trans. Roy.Inst.Naval Arch., 111, p. 241-56. (1969).

El Refaie, M. and Halling, J., An experimental study of the apparent area of contact under nominally Hertzian contact of rough surfaces: Proc. of the Tribology Convention, Gothenburg, May, 1969. Proc. I. Mech. E. 183, part 3P, Paper 14, p. 116-24. (1968/69).

Fowles, P.E., The application of elastohydrodynamic lubrication theory to individual asperity-asperity collisions: Trans. ASME, Ser.F., J.Lubr.Tech., 91, 3, p. 464-76. (July, 1969).

Golubev, V.N. and Kovarskii, N.Y., Statistical description of the microrelief of electrolytic deposits: Soviet Electrochemistry, 5, 1295-8. (1969).

Hisakado, T., On the mechanism of contact between solid surfaces.(Ist Report, The initial separation and the distributions of slopes of facets on surface and on profile curve): Bull. J.S.M.E., 12, p. 1519-27. (1969).

Hisakado, T., On the mechanism of contact between solid surfaces.(2nd Report, The real area of contact, the separation and the penetrating depth): Bull. J.S.M.E., 12, p. 1528-36. (1969).

Hisakado, T., On the mechanism of contact between solid surfaces.(3rd Report, The number and the distribution of radii of contact points): Bull. J.S.M.E., 12, p. 1537-45. (1969).

Jones, P.V., Evaluation of surface geometry and its analysis by computer techniques: Cranfield, UK, unpublished M.Sc. thesis (1969).

Law, D.A., Further developments in cylinder bore finishes: S.A.E. Paper No. 690751, 12p. (October 27-29, 1969).

Lo, C.C., Elastic contact of rough cylinders: Int.J.Mech.Sci., 11, p. 105-15. (1969).

Luk'yanov, V.S. and Tabachnikova, N.A., Estimating the radius of curvature of a profilometer probe by means of specimens with a regular triangular profile: Meas. Tech., 12, p. 1667-72. (1969).

Marcus, A.H., Distribution of slopes on a cratered planetary surface, theory and preliminary applications: J. Geophysical Res., 74, p. 5253-67. (1969).

Mitchell, J., Surface texture - its influence on wear, friction and durability: Australian Machy & Prod.Eng., 22, p. 35-7.(1969).

Mitchell, L.A. and Rowe, M.D., Influence of asperity deformation mode on gas leakage between contacting surfaces: J. Mech. Eng. Sci., 11, p. 534-45, (1969).

Moore, D.F., A history of research on surface texture effects: Wear, 13, 6, p. 381-412. (June, 1969).

Motycka, J., Proposed interferometric method of measurement of roughness and autocorrelation function in smooth finished surfaces: Appl. Optics, 8, 7, p. 1435-8. (July, 1969).

Nara, J., Two-dimensional representation of surface roughness: Ann. C.I.R.P., 17, p. 485-93, (1969).

Nelson, H.R., Taper sectioning as a means of describing the surface contour of metals: Proc.Conf. on Friction & Surface Finish, p. 217-37. (2nd ed. 1969).

Ostvik, R. and Christensen, H., Changes in surface topography with running-in: Proc. of the Tribology Convention, Gothenburg, May, 1969. Proc. I.Mech. E., 183, part 3P, p. 57-65. (1968/69).

Parkes, D.H., Calibration, certification and traceability of surface roughness measuring equipment: A.S.T.M.E. Tech.Paper IQ69-505, 11p. (1969).

Radhakrishnan, V.P. and von Weingraber, H., Die analyse digitalisierter oberflächenprofile nach dem e-system (analysis of digitized surface profiles by the e-system): Fachberichte für Oberflächentechnik, DK 620.179.11, p. 215-223 (November/December 1969).

Ribbens, W.B., Interferometric surface roughness measurement: Appl. Opt. 8, p. 2173-6. (1969).

Schurig, O.R., How should engineers describe a surface?: Proc.Conf. on Friction & Surface Finish, p. 141-55.(2nd edn., 1969).

Stralkowski, C.M., Wu, S.M., and DeVor, R.E., Characterization of grinding wheel profiles by autoregressive-moving average models: Int.J. Mach.Tool Des. Res., 9, p. 145-63. (1969).

Tucker, R.C. and Meyerhoff, R.W., An SEM study of surface roughness measurement: Proc. 2nd Annual Scanning Electron Microscopy Symp., Illinois Inst. of Technol. Res. Inst., Chicago, U.S.A., April, 1969, p. 389-96. (1969).

Van Hasselt, R., The functional behaviour of surfaces. Some mechanical functions: Ann. C.I.R.P., 17, p. 217-24. (1969).

Velzel, C.H.F., Measurement of surface roughness by interferential contrast, an application of shearing interferometry to the study of phase objects: Proc.Conf. Optical Instruments & Techniques, Reading, U.K., July, 1969, p. 238-48. (1969).

Vitenberg, Y.R., Evaluation of surface finish by co-variance functions: Russ.Engng.J., 49, 1, p. 58-60. (1969).

Wallace, D.A., The preparation of smooth surfaces: Proc. Conf. on Friction & Surface Finish, p. 22-43. (2nd ed., 1969).

Wallach, J., Surface topography description and measurement: In, Surface Mechanics. Ling F.F. (Ed.), ASME, New York, p. 1-23. (1969).

Way, S., Description and observation of metal surfaces: Proc. Conf. on Friction & Surface Finish, p. 44-75. (2nd ed., 1969).

Welford, W.T., Some applications of projected interference fringes: Optica Acta, 16, p. 371-6. (1969).

Whitehouse, D.J. and Archard, J.E., The properties of random surfaces in contact: In, Surface Mechanics. Ling, F.F. (Ed.), ASME, New York, p. 36-57. (1969).

Williamson, J.B.P., Pullen, J. and Hunt, R.T., The shape of solid surfaces: In, Surface Mechanics. Ling, F.F. (Ed.)., ASME, New York, p. 24-35. (1969).

Yandell, W.O., The effect of surface geometry on the lubricated sliding friction and polishing of road stones: Australian Road Research, 3, 10, p. 50-68 (June 1969).

# 1970

Andrews, R.H. and Thomas, A.G., Investigation of the surface topography of alumina substrates: Proc. Br.Ceram. Soc. (Electrical and Magnetic Ceramics - 2), 18, p. 271-80. (August, 1970).

Antler, M., Case for smooth contact finishes: Electron Packag. Prod., 10, 3, p. 114-6 and 118. (March, 1970).

Aupperle, F.A. and Lambert, R.F., Effects of roughness on measured wall-pressure fluctuations beneath a turbulent boundary layer: J.Acoust.Soc. Am. 47, p. 359-70. (1970).

Barber, J.R., The conduction of heat from sliding solids: Int. J. Heat Mass Transfer, 13, p. 857-869 (1970).

Bellow, D.G. and Nelson, D.D., On the experimental investigation of the stiffness of clamped machine surfaces: Exp.Mech., 10, 12, p. 506-13. (December, 1970).

Bikerman, J.J., Physical surfaces: Academic Press, New York. 476p. (1970).

Butin, J.P., NDT by the replica testing: Non-Destructive Testing, p. 1738-8. (June, 1970).

Greenwood, J.A. and Tripp, J.H., The contact of two nominally flat rough surfaces: Proc. I. Mech.E., 186, p. 625-33. (1970/71).

Grieve, D.J., Kaliszer, H., and Rowe, G.W., A normal wear process examined by measurements of surface topography: Ann, C.I.R.P., 18, p. 585-92. (1970).

Hammond, D.L., Surface finish analysis through analog techniques: S.A.E. Paper No. 700142, 8p. (1970).

Hehn, A.H., Effects of friction and wear on a sealing interface: Lubr.Engng. (A.S.L.E.)., 26, 6, p. 206-12.(June, 1970).

Hisakado, T., On the mechanism of contact between solid surfaces (4th Report, Surface roughness effects on dry friction): Bull. J.S.M.E., 13, p. 129-39. (1970).

Hodgkinson, I.J., The application of fringes of equal chromatic order to the assessment of the surface roughness of polished fused silica: J.Phys.E, Sci. Instrum. 3, 4, p. 300-4. (April, 1970).

Hodgkinson, I.J., Simple scatter method for optical surface roughness and slope measurements.Roughness of polished fused silica: J.Phys.E. Sci.Instrum., 3, p. 341-2.(May, 1970).

Huffington, J.D., Comparative studies of surfaces by means of contact area measurements and stylus profile traces: Wear, 16, 5, p. 313-24. (November, 1970).

Jagger, E.T., Oil seal research: Indus. Lub. & Trib. (reprint) (February 1970).

Jungles, J. and Whitehouse, D.J., An investigation of the shape and dimensions of some diamond styli: J.Phys.E, Sci. Instrum., 3, 6, p. 437-40. (June, 1970).

Kaliszer, H., Grieve, D.J. and Rowe, G.W., Digital computation of surface topography: Proc. of the 11th Int. Machine Tool Des. & Res. Conf., Birmingham, U.K., September, 1970, p. 543-50. (1971).

Kimura, Y., Estimation of the number and the mean area of real contact points on the basis of surface profiles: Wear, 15, 1, p. 47-55. (January, 1970).

Logacheva, L.N. and Prokhorova, N.A., Investigating the microgeometry of the surface of monocrystalline acoustic lines: Meas.Tech., 13, 10, p. 1506-9. (October, 1970).

O'Callaghan, P.W., and Probert, S.D., Real area of contact between a rough surface and a softer optically flat surface: J.Mech.Engng. Sci., 12, p. 259-67. (1970).

Olsen, W.S. and Adams, R.M., A laser profilometer: J. Geophysical Res., 75, p. 2185-7. (1970).

Quinn, T.F.J., Physical techniques for examining surfaces: Tribology, 3, 4, p. 198-205. (November, 1970).

Radhakrishnan, V., Effect of stylus radius on the roughness values measured with tracing stylus instruments: Wear, 16, 5, p. 325-35. (November, 1970).

Reason, R.E., The distinction between measuring and specifying surface texture: S.M.E. Paper No. IQ70-288, 6p. (1970).

Schneider, E.J., Surface finish testing - the present state of the art and its future: S.A.E. Paper No. 700144, 6p. (1970).

Smith, T.F. and Hering, R.G., Comparison of bidirectional reflectance measurements and model for rough metallic surfaces: Proc. 5th Symp. Thermophys. Properties, Newton, U.S.A., September 30 - October 2, 1970, organised by the ASME, p. 429-35. (1970).

Spragg, R.C. and Whitehouse, D.J., A new unified approach to surface metrology: Proc. I.Mech.E. (London), 185, p. 697-707. (1970/71).

Ten Napel, W.E. and Bosma, R., The influence of surface roughness on the capacitive measurement of film thickness in elastohydrodynamic contacts: Proc.I.Mech.E., 185, p. 635-9. (1970/71).

Thomas, T.R. and Probert, S.D., Thermal contact resistance, The directional effect and other problems: Int.J.Heat Mass Transfer, 13, p. 789-807. (1970).

Thomas, T.R. and Probert, S.D., Establishment of contact parameters from surface profiles: J.Phys.D, Appl.Phys., 3, 3, p. 277-89. (March, 1970).

Tolansky, S., Multiple-beam interferometry of surfaces and films: Dover Publications, New York. (1970).

Tolansky, S., Multiple-beam interference microscopy of metals: Academic Press, London. (1970).

Tsukizoe, T. and Hisakado, T., The influence of surface roughness on the mechanism of friction: Trans. ASME Ser.F., J.Lubr.Tech., 92, 2, p. 264-73.(April, 1970).

Uppal, A.H. and Probert, S.D., Topography changes resulting from surfaces being in contact under static and dynamic loads: Wear, 16, 4, p. 261-71. (October, 1970).

Vitenberg, Yu.P., Surface-texture assessment systems: Russian Engineering, J., L, 11, p. 71-74 (1970).

Whitehouse, D.J. and Archard, J.F., The properties of random surfaces of significance in their contact: Proc. Roy. Soc. Lond., A.316, no. 1524, p. 97-121. (1970).

## 1971

Bhateja, C.P., Chisholm, A.W.J. and Pattinson, E.J., A computer-aided study of the texture of the working surfaces of grinding wheels: Proc. Int. Mach. Tool, Des. & Res. Conf., London (1971).

Chivers, T.C., Mitchell, L.A. and Rowe, M.D., Voldage between rough surfaces, correlation of measurements and theory: Proc. of the 5th Int.Conf. on Fluid Sealing, Coventry, March 30 - April 2, 1971, HRA, paper C2, p. C2-17 to C2-28. (1971).

Christensen, H., Some aspects of the functional influence of surface roughness in lubrication: Wear, 17, 2, p. 149-62. (February, 1971).

Christensen, H. and Tonder, K., The hydrodynamic lubrication of rough bearing surfaces of finite width: Trans. ASME Ser.F. J.Lubr.Tech., 93, 3, p. 324-30. (July, 1971).

Court, R.A., The effect of die surface-finish on the cold extrusion of steel: NEL Report 476 (February 1971).

De Vor, R.E. and Wu, S.M., Surface profile characterisation by autoreggressive-moving average models: ASME Paper No. 71-WA/Prod-26, 8p. (1971).

Depew, C.A. and Weir, R.D., Surface roughness determination by the measurement of reflectance: Applied Optics, 10, p. 969-70. (1971).

DeVor, R.E. and Wu, S.M., Surface profile characterisation by autoregressive moving-average models: J. Eng. for Ind., ASME Paper 71-WA/Prod-26 (1971).

Dowson, D. and Whomes, T. L., The effect of surface roughness upon the lubrication of rigid cylindrical rollers. 1. Theoretical: Wear, 18, 2, p. 129-40. (August, 1971).

Duthaler, 0., Surface texture measurements in theory and practice: Microteonic, 25, p. 115-6. (March, 1971).

Fowles, P.E., Extension of the elastohydrodynamic theory of individual asperity-asperity collisions to the second half of the collision: Trans. ASME, Ser. F., J. Lubr. Tech., 93, 2, p. 213-5. (April, 1971).

Fowles, P.E., A thermal elastohydrodynamic theory for individual asperity-asperity collisions: Trans. ASME Ser. F. J. Lubr. Teoh 93, 3, p. 383-97. (July, 1971).

Halling, J. and El-Refaie, M., A statistical model for engineering surfaces: Proc. of the Tribology Convention, Douglas, U.K., May 12-15, 1971. organised by I. Mech. E., Paper C60/71, p. 60-70. (1972).

Hirano, F., Yamashita, N. and Kamitani, T., Effect of surface roughness on work hardening and rolling fatigue in relation to elastohydrodynamic lubrication: Proc. of the Tribology Convention, Douglas, U.K., May 12-15, 1971. organised by I.Mech.E. Paper C85/71, p. 86-96. (1972).

Kharach, G.M. and Eksler, L.I., Standardization of surface waviness in machine parts: Meas. Tech., 14, p. 221-3. (February, 1971).

Mikic, B., Analytical studies of contact of nominally flat surfaces, effect of previous loading: Trans. ASME, Ser. F. J. Lubr. Tech., 93, 4, p. 451-6. (October, 1971).

Moore, D.F., Influence of surface topography on the friction and lubrication of elastometers: Ann. C.I.R.P., 19, 4, p. 673-8. (July, 1971).

Nara, J., About the standardization and spectral measurement of surface waviness: Ann. C.I.R.P., 19, p. 687-93. (1971).

Nayak, P.R., Random process model of rough surfaces: Trans. ASME Ser. F. J. Lubr. Tech., 93, 3, p. 398-407. (July, 1971).

Radhakrishnan, V., Statistical behaviour of surface profiles: Wear, 17, 4, p. 259-67. (April, 1971).

Radhakrishnan, V., Analysis of surface profiles by computational methods: J.Inst.Eng. (India), 51, ME6, p. 272-8. (July, 1971).

Reason, R.E., A comparison in tabular form of stylus methods of surface profile assessment: Ann. C.I.R.P., 19, p. 559-63. (1971).

Roth, A., The interface-contact vacuum sealing processes: J.Vacuum Sci. & Technol. 9, p. 14-23. (1971).

Singh, K. and Lumley, J.L., Effect of roughness on the velocity profile of a laminar boundary layer: Appl. Sci.Res. 24, p. 168-86. (1971).

Tallian, T.E. and McCool, J.I., An engineering model of spalling fatigue failure in rolling contact, II. The surface model: Wear, 17, 5/6, p. 447-61. (May/June, 1971).

Thomas, T.R., Uppal, A.H. and Probert, S.D., Hardness of rough surfaces: Nature Physical Sci., 229, p. 86-7. (1971).

Thomley, R.H. and Lees, K., The effect of planform shape on the normal dynamic characteristics of metal to metal joints: Proc. of the Tribology Convention, Douglas, U.K., May 12-15, 1971. orga-nised by I.Mech.E., Paper C62/71, p. 71-9. (1972).

Trumpold, G., Interference method of measuring the roughness of a surface: Meas. Tech., 14, 6, p. 855-8. (June, 1971).

Whitehouse, D.J., Typology of manufactured surfaces: Ann. C.I.R.P., 19, p. 417-31. (1971).

Williamson, J.B.P., Mechanical contact of heavily loaded surfaces: Rev. Roum. Sci. Techn.-Mec. Appl., 16, p. 715-22. (1971).

Yip, F.C. and Venart, J.E.S., An elastic analysis of the deformation of rough spheres, rough cylinders and rough annuli in contact: J.Phys.D, Appl.Phys., 4, 10, p. 1470-86. (October, 1971).

Young, R.D., Surface microtopography: Physics Today, 24, p. 42-9. (1971).


## 1972

Baul, R.M., Graham, D. and Scott, W., Characterization of the working surface of abrasive wheels: Tribology, 2, 8, p. 169-76. (August, 1972).

Bell, J.C. and Dyson, A., Mixed friction in an elastohydrodynamic system: Symp. on Elastohydrodynamic Lubrication, Leeds, Aprll, 11-13, 1972, organised by the I. Meeh. E., Paper C12/72, p. 68-76. (1972).

Campbell, J.C., Cylinder bore surface roughness in internal combustion engines, its appreciation and control: Wear, 19, 2, p. 163-8. (February, 1972).

Christensen, H., A theory of mixed lubrication: Proc. I. Mech. E., 186, p. 421-30. (1972).

Dakshina Murthy, H.B. and Raghavan, M.R., Compliance of rough cylinders in compression: Wear, 20, 3, p. 353-69. (July, I972).

Gray, G.G. and Johnson, K.L., The dynamic response of elastic bodies in rolling contact to random roughness of their surfaces: J.Sound & Vibration, 22, p. 323-42. (1972).

Guerrero, J.L. and Black, J.T., Stylus tracer resolution and surface damage as determined by scanning electron microscopy: Trans. A.S.M.E, Ser. B. J, Eng. Ind., 94, 4, p. 1087-93. (November, 1972).

Gupta, P.K. and Cook, N.H., Statistical analysis of mechanical interaction of rough surfaces: Trans. ASME Ser. F. J.Lubr.Tech., 94, 1, p. 19-26. (January, 1972).

Halling, J., The specification of surface quality - Quo Vadis ?: The Prod.Engn., 51, p. 171-9. (1972).

Hansen, C.M., Surface roughness profiles and coatings performance: J.Paint Technol., 44, 570, p. 61-6. (1972).

Hunter, A.J., On the distribution of asperity heights of surfaces: J. Phys. D, Appl, Phys, 5, 2, p. 319-24. (February, 1972).

Johannet, P., Study of internal structure of closed contacts under by a neutrographic method: Proc. 6th Conf. on Electric Contact Phenomena, Chlcago, U.S.A., 1972, p. 299-305. (1972).

Johnson, K.L., Greenwood, J.A. and Poon, S.Y., A simple theory of asperity contact in elastohydrodynamic lubrication: Wear, 19, 1, p. 91-108. (January, 1972).

King, R.J., Downs, M.J., Clapham, P.B., Raine, K.W. and Talim, S.P., A comparison of methods for accurate film thickness measurement: J. Phys. E, Scien. Insts., 5, p. 445-449 (1972).

Krushchov, M.M. and Pruzhanskii, L., Assessing the microtopography of a machined steel surface: Yu. Russ. Engng.J. 52, 10, p. 3-6. (1972).

Kurimoto, M., A new surface tester with a stylus driven by an on-off servomechanism: JSME Bulletin, 15, 82, p. 528-535 (1972).

Law, S.S. and Wu, S.M., Simulation study of the grinding process: ASME Paper No.72-WA/Prod-25, 7p. (November 26-30, 1972).

Levy, G., Linford, R.G. and Mitchell, L.A., Wear behaviour and mechanical properties, The similarity of seeming unrelated approaches: Wear, 21, 1, p. l67-77. (August, 1972).

Nayak, P.R., Contact vibrations: J.Sound & Vibration, 22, p. 297-322. (1972).

Nayak, P.R., Surface-roughness effects in rolling contact: Trans. ASME Ser.E. J. Appl. Mech., v. 39, no. 2, p. 456-60. (June, 1972).

Pullen, J. and Williamson, J.B.P., On the plastic contact of rough surfaces: Proc. R. Soc. Lond., A327, p. 159-173 (1972).

Radhakrishnan, V., Selection of an enveloping circle radius for E-system roughness measurement: Int. J. Mach. Tool Des. & Res. 12, p. 151-9. (1972).

Ribbens, W.B., Surface roughness measurement by holographic interferometry: Appl. Opt., 11, p. 807-10. (1972).

Shneyder, Yu, G., Mulin, Yu.I., Korolev, Yu.V. and Runova, N.A., Effect of the microtopography of the roller surfaces of the rotating-head unit on the performance of the tape drive of a miniature magnetic video recorder: Sov.J.Opt.Technol., 39, 12, p. 737-9. (December, 1972).

Solaja, V., A contribution to surface finish evaluation in machining: Ann. C.I.R.P., 21, p. 151-2. (1972).

Sprague, R.A., Surface roughness measurement using white light speckle: Appl. Optics, 11, p. 2811-6. (November, 1972).

Tallian, T.E., The theory of partial elastohydrodynamic contacts: Wear, 21, l, p. 49-101. (August, 1972).

Thomas, T.R., Computer simulation of wear: Wear, 22, 1, p. 83-90. (October, 1972).

Thomas, T.R. and Probert, S.D., Correlations for thermal contact conductance in vacuo: Trans. Am. Soc. Mech. Engrs., 94C, p. 176-180 (1972).

Thompson, R.A. and Bocchl, W., A model for asperity load sharing in lubricated contacts: A.S.L.E. Trans. 15, 1, p. 67-79. (January, 1972).

Tonder, K. and Christensen, H., Waviness and roughness in hydrodynamic lubrication: Proc.I. Mech. E., 186, p. 807-12. (1972).

Tonder, K. and Christensen, H., Lubrication of cylindrical rollers with surface corrugations: Wear, 20, 3, p. 309-14. (July, 1972).

Tsukizoe, T. and Hisakado, T., On the mechanism of heat transfer between metal surfaces in contact, part 1, theoretical analysis and experimental justification of theory: Heat Transfer-Japanese Res., 1, 1, p. 104-12. (January/March, 1972).

Tsukizoe, T. and Hisakado, T., On the mechanism of heat transfer between metal surfaces in contact.(2d report, thermal contact resistance between metal surfaces in vacuum): Heat Transfer-Japanese Res., 1, 2, p. 23-31. (April/June, 1972).

Uppal, A.H. and Probert, S.D., Deformation of single and multiple asperities on metal surfaces: Wear, 20, 3, p. 381-400. (July, 1972).

Uppal, A.H. and Probert, S.D., Considerations governing the contact between a rough and a flat surface: Wear, 22, 2, p. 215-34. (November, 1972).

Uppal, A.H., Probert, S.D. and Thomas, T.R., The real area of contact between a rough and a flat surface: Wear, 22, 2, p. 163-83. (November, 1972).

Whitehouse, D.J., Modern methods of assessing the quality and function of surface texture: S.M.E. Paper No. IQ72-206, 25p. (1972).

Whitehouse, D.J. and Vanherck,.P., Survey of reference lines in the assessment of surface texture: Ann. C.I.R.P., 21/2, p. 267-73. (1972).

Williamson, J.B.P. and Hunt, R.T., Asperity persistence and the real area of contact between rough surfaces: Proc. R. Soc. Lond. A, 327, p. 147-57. (1972).

Willn, J.E., Characterisation of cylinder bore surface finish - A review of profile analysis: Wear, 19, 2, p. 143-62. (February, 1972).

Young, R., Ward, J. and Scire, F., The topografiner, An instrument for measuring surface microtopography: Rev.Sci.Instrum., 43, 7, p. 999-1011. (July, 1972).

Young, R.D. and Scire, F.E., Precision reference specimens of surface roughness, Some characteristics of the Cali-Block: J.Res.Nat.Bur.Stand., C76C, 1 & 2, p. 21-3. (January/June, 1972).


## 1973

Archard, J.F., Elastohydrodynamic lubrication of real surfaces: Tribology, 6, 1, p. , 8-15. (February, 1973).

Back, N., Burdekin, M, and Cowley, A., Review of the research on fixed and sliding joints: Proc. of the 13th Int. Machine Tool Des. & Res. Conf., Manchester, U.K., September, 1972, p. 87-97. (1973).

Black, J.T. and Kalen, S.E., The anatomy of a roller burnished surface: Proc. Int.Conf. on Surface Technol., Pittsburgh, U.S.A., May, 1973, organised by S.M.E., p. 507-26. (1973).

Bryan, J. and Lindberg, E., Relationship of surface finish to dimensional tolerance: Proc. Int. Conf. on Surface Technol., Pittsburgh, U.S.A., May, 1973, organised by S.M.E., p. 117-30. (1973).

Butler, D.W., A stereo electron microscope technique for microtopographic measurements: Micron, 4, p. 410-424 (1973).

Childs, T.H.C., The persistence of asperities in indentation experiments: Wear, 25, 1, p. 3-16. (July, 1973).

Cuthrell, R.E. and Tipping, D.W., Electric contacts - application of interference fringe microscopy to electric contact problems: J.Appl. Phys., 44, 7, p. 3277-83. (July, 1973).

Damir, M.N.H., Error in measurement due to stylus kinematics: Wear, 26, 2, p. 219-27, (November, 1973).

Dekoninck, C., Experimental study of the normal static stiffness of metallic contact surfaces of joints: Proc. of the 13th Int. Machine Tool Des. & Res. Conf., Manchester, U.K., September, 1972, p. 61-6, 1973).

Deutsch, S.J., Wu, S.M. and Straklowski, C.M., A new irregular surface measuring system: Int.J.Mach. Tool.Des. & Res., 13, p. 29-42. (1973).

Endo, K. and Kotani, S., Observations of steel surfaces under lubricated wear: Wear, 26, 2, p. 239-51. (November, 1973).

Esken, R.L., Manufacturing for dimensional accuracy: Proc. Int. Conf. on Surface Technol., Pittsburgh, U.S.A., May, 1973, organised by S.M.E., p. 621-41. (1973).

Hollander, A.E. and Lancaster, J.K., An application of topographical analysis to the wear of polymers: Wear, 25, 2, p. 155-70. (August, 1973).

Ito, Y. and Masuko, M., Experimental study on the optimum face pressure on a bolted joint considering the damping capacity: Proc. of the 13th Int. Machine Tool Des. & Res. Conf., Manchester, U.K., September, 1972, p. 1123-54. (1973).

Kaliszer, H. and Rowe, G.W., Digital computation for surface topographical measurements applied in tribology: The Use of Digital Computers in Measurement, Mtg., Univ. of York, U.K., September 24-27, 1973. I.E.E. Conf.Publ. 103,. 7-16. (1973).

Kaliszer, H. and Trmal, G., 'Apparent' run-out of the grinding-wheel periphery and its effect on surface topography: Proc. of the 13th Int. Machine Tool Des. & Res. Conf., Manchester, U.K., September, 1972, p. 297-302. (1973).

Ling, F.F., Surface mechanics: John Wiley, New York. (1973).

McAdams, H.T., Surface characterization by topographic feature extraction and discriminant function analysis: Proc. of the C.I.R.P. Seminars on Manufacturing Systems, 2, 4, p. 199-222. (1973).

McAdams, H.T., Quantitative microcartography a physico-geometric approach to surface integrity: Proc. Int.Conf. on Surface Technol., Pittsburgh, PA, May, 1973, organised by S.M.E., p. 96-116. (1973).

Mollenhauer, C., Surface topography measurement techniques: Proc. Int.Conf. on Surface Technol., Pittsburgh, U.S.A., May, 1973, organised by S.M.E., p. 173-86. (1973).

Nagata, K., Umehara, T. and Nishiwaki, J., The determination of RMS roughness and correlation length of rough surface by measuring spatial coherence function: Japan. J.Appl. Phys., 12, p. 1693-8. (November, 1973).

Nayak, P.R., Some aspects of surface roughness measurement: Wear, 26, 2, p. 165-74. (November, 1973).

Nayak, P.R., Random process model of rough surfaces in plastic contact: Wear, 26, 3, p. 305-33. (December, 1973).

O'Callaghan, P.W. and Probert, S.D., Effects of static loading on surface parameters: Wear, 24, 2, p. 133-45. (May, 1973).

Onions, R.A. and Archard, J.F., The contact of surfaces having a random structure: J.Phys.D, Appl. Phys., 6, 3, p. 289-304. (February 8, 1973).

Pal, D.K. and Basu, S.K., Surface preparation of machine tool slideways and its influence on the contact stiffness: Tribology, 6, 5, p. 172-7. (October, 1973).

Peklenik, J., Envelope characteristics of machined surfaces and their functional importance: Proc. Conf. on Surface Technol., Pittsburgh, U.S.A., May, 1973, organised by S.M.E., p. 74-95. (1973).

Puckett, S.J. and Pfaffenberger, E.E., Rolling contact bearing surfaces - the current relationship between requirements and processing: Proc. Int. Conf. on Surface Technol., Pittsburgh, U.S.A., May, 1973, organised by S.M.E., p. 548-65. (1973).

Rabinowicz, E., The nature of polished and burnished surfaces: Proc.Int. Conf. on Surface Technol., Pittsburgh, PA, May, 1973, organised by S.M.E., p. 23-38. (1973).

Radhakrishnan, V., Significance of profile length in roughness measurements: Wear, 23, 3, p. 339-47. (March, 1973).

Radhakriskhan, V., Analysis of some of the reference lines used for measuring surface roughness: Proc. I.Mech. E., 187, p. 575-82. (1973).

Reason, R.E., Measurement of surface topography and accuracy of stylus instruments: Proc. Int. Conf. on Surface Technol., Pittsburgh, U.S.A., May, 1973, organised by S.M.E., p. 187-93. (1973).

Reason, R.E., Stylus methods of surface measurement: Bull. Inst. Phys., p. 587-9. (October, 1973).

Schofield, R.E. and Thornley, R.H., Calculating the elastic and plastic components of deflation of joints formed from machined surfaces with flatness errors: Proc. of the 13th Int.Machine Tool Des. & Res. Conf., Manchester, U.K., September, 1972, p. 67-73. (1973).

Selvam, M.S. and Radhakrishnan, V., Effect of side flow on the straightness of the ridge and the surface roughness: Int.J.Mach. Tool Des.Res., 13, p. 243-55. (1973).

Selvam, M.S. and Radhakrishnan, V., Characteristics of a surface machined with a single point tool: Tribology, 6, 3, p. 93-6. (June, 1973).

Thomas, T.R., Correlation analysis of the structure of a ground surface: Proc. of the 13th Int.Machine Tool Des. & Res.Conf., Manchester, U.K., September, 1972, p. , 03-8. (1973).

Thomas, T.R., Influence of roughness on the deformation of metal surfaces in static contact: Proc. 6th Int.Conf. on Fluid Sealing, February 27 - March 2, 1973. Munich, HRA Fluid Engineering, Cranfield. Paper B3, p. B3-33 to B3-48. (1973).

Thomas, T.R., Measurement of correlation length on a ground surface: Microtecnic, 26, p. 447. (1973).

Thornley, R.H. and Lees, K., Some static and dynamic characteristics of loaded, machined joint faces: Proc. of the 13th Int. Machine Tool Des. & Res. Conf., Manchester, U.K., September, 1972, p. 79-86. (1973).

Uppal, A.H. and Probert, S.D., Mean separation and real contact area between surfaces pressed together under high static loads: Wear, 23, 1, p. 39-53 (January, 1973).

Uppal, A.H. and Probert, S.D., The plastic contact between a rough and a flat surface: Wear, 23, 2, p. 173-84. (February, 1973).

Uppal, A.H. and Probert, S.D., Deformation of single and multiple asperity models of modelling clay: Wear, 23, 3, p. 367-75. (March, 1973).

Verbunt, J.P.M., Droplet interferometry for investigating smooth surfaces: Philips Tech. Rev. 33, p. 74-5. (1973).

Verbunt, J.P.M., Simple optical interference method for the inspection of solid surfaces: Appl. Opt., 12, p. 1839-40. (1973).

Westberg, J., Assessing the quality of very fine surfaces - a coming breakthrough for light reflection photo - electrical methods?: Proc. Int.Conf. on Surface Technol., Pittsburgh, PA, May, 1973, organised by S.M.E., p. 194-210. (1973).

Whitehouse, D.J., Review of topography of machine surfaces: Proc. Int. Conf. on Surface Technol., Pittsburgh, PA, May, 1973, organised by S.M.E., p. 53-73. (1973).

# 1974


Abdulkadir, A. and Birkebak, C., Spectral directional emittance of various rough surfaces approximated by pyramidal surface undulations: A.I.A.A. Paper No. 74-673. (1974).

Abdulkadir, A. and Birkebak, R.C., Optical surface roughness and slopes measurements with a double beam spectrophotometer: Rev.Sci.Instrum., 45, 11, p. 1356-60. (November, 1974).

Agullo, J.B. and Pages-Fita, J., Performance analysis of the stylus technique of surface roughness assessment, a random field approach: Proc. of the 15th Int. Machine Tool Des. & Res. Conf., Birmingham, U.K., September, 1974, p. 349-62. (1974).

Andersson, S., Plastic replicas for optical and scanning electron microscopy: Wear, 29, 2, p. 271-4. (August, 1974).

Archard, J.F., Surface topography and tribology: Tribology, 7, 5, p. 213-20. (October, 1974).

Bendeli, A., Duruz, J. and Thwaite, E.G., A surface simulator for the precise calibration of surface roughness measuring equipment: Metrologia., 10, p. 137-43. (1974).

Bhateja, C.P., A simplified analysis for the surface texture of rough engineering surfaces: Wear, 27, 2, p. 219-23. (February, 1974).

Bowden, F.P. and Tabor, David, Friction: Heinemann, London, U.K. (1974).

Chivers, T.C., Mitchell, L.A. and Rowe, M.D., The variation of real contact area between surfaces with contact pressure and material hardness: Wear, 28, 2, p. 171-85. (May, 1974).

Cuthrell, R.E., Ultrahigh vacuum system for the study of the mechanical and electrical properties of metallic surfaces: J.Vacuum Sci. Technol., 11, 6, p. 1166-9.(November/December, 1974).

Dakshina Murthy, H.B. and Rajhavan, M.R., The real area of contact and compliance of rough cylinders in compression: Wear, 27, 1, p. 47-60. (January, 1974).

Doherty, C.B., Surfaces produced by abrasive blasting of steel: Mater. Performance, 13, 11, p. 12-20. (November, 1974).

Eschbach, H.L. and Verheyen, F., Possibilities and limitations of the stylus method for thin film thickness measurements: Thin Solid Films, 21, p. 237-243 (1974).

Freyburg, D.W., The multi-parameter approach to surface texture measurement: S.M.E. Paper IQ74-14D, 13p. (1974).

Friedman, M.Y., Wu, S.M., and Suratkar, P.T., Determination of geometric properties of coated abrasive cutting edges: Trans. ASME Ser.B., J.Engng.Ind., 96, 4, p. I239-44. (November, 1974).

Ghabrial, S.R. and Zaghlool, S.A., The effect of surface roughness on static friction: Int.J.Mach.Tool Des. Res., 14, p. 299-309. (1974).

Godet, M., Surface and shape effects in the measurement of friction forces: Wear, 28, 1, p. 115-24. (April, 1974).

Hasegawa, M., Statistical analysis for the generating mechanism of ground surface roughness: Wear, 29, l, p. 31-9. (July, 1974).

Hasegawa, M., Tsukizoe, T. and Hisakado, T., On the generating mechanism of surface roughness (Forming process of single asperity by two grooves interference): Bull. J.S.M.E., 17, p. 367-75. (March, 1974).

Hirst, W. and Hollander, A.E., Surface finish and damage in sliding: Proc. R.Soc. Lond. A. 337, p. 379-94. (1974).

Hisakado, T., Effect of surface roughness on contact between solid surfaces: Wear, 28, 2, p. 217-34. (May, 1974).

Hisakado, T. and Tsukizoe, T., Effects of distribution of surface slopes and flow pressures of contact asperities on contact between solid surfaces: Wear, 30, 2, p. 213-27. (November, 1974).

Howes, V.R., An angle profile technique for surface studies: Metallography., 7, p. 431-40. (1974).

Hsieh, C.K., A critical evaluation of surface geometrical parameters for a nominally flat surface model: ASME, er.F. J.Lubr.Tech., 96, 4, p. 638-9. (October, 1974).

Ilsmus, M.M., and Rudzit, Ye. A., Study of elastic contact of rough sphere with a plane (in Russian): Microgeometry and Operational Properties of Machines, Zinate, Riga, 1974, p. 137-150.

Jackson, A. and Cameron, A., An interferometric study of the EHL of rough surfaces: ASLE/ASME, 19, 1, p. 50-60 (October 1974).

Kaliszer, H. and Trmal, G., Factors influencing the topography of ground surfaces: Proc. of the Int.Conf. on Prod. Eng., Tokyo, Japan, August 26-29, 1974, 1, p. 689-94. (1974).

Kazamaki, T., An investigation of air leakage between contact surfaces.(3rd report, in which iron and brass were used as specimen): Bull. J.S.M.E., 17, 112, p. 1321-31. (October, 1974).

Komanduri, R. and Shaw, M.C., Technique for investigating the surface features of a grinding wheel: Ann. C.I.R.P., 23, 1, p. 95-6. (1974).

Leaver, R.H., Sayles, R.S. and Thomas, T.R., Mixed lubrication and surface topography of rolling contacts: Proc. I. Mech. E., 188, p. 461-9. (1974).

Levin, A.I., Determination of the surface-finish parameters by means of the total internal reflection method: Meas. Tech., I7, p. 543-7. (April 1974).

Lopovok, T.S., Paul, A-M. and Eksler, L.I., Analysis of methods for filtration of surface waviness: Meas. Tech., 17, p. 1411-5. (September, 1974).

Luk'yanov, V.S., Determination of surface roughness according to the All-Union State Standards (GOST) 2789-73: Measurement Techniques, 17, p. 1818-23. (1974).

McAdams, H.T., Scanning electron microscope and the computer - new tools for surface metrology: Modem Machine Shop, p. 82-91. (June, 1974).

Michau, B., Berthe, D. and Godet, M., Influence of pressure modulation in a linear Hertzian contact on the internal stress field: Wear, 28, 2, p. 187-95. (May, 1974).

Mikic, B.B., Thermal contact conductance, theoretical considerations: Int.J.Heat Mass Transfer, 17, p. 205-4. (1974).

Morgan, L.L., Spectroscopic determination of surface topography using acoustic surface waves: Acustica, 30, 4, p. 222-8. (April, 1974).

Nara, J. and Yamamoto, K., Recent development of surface roughness measurement in Japan: Bull. Jap, oc. Precision Engng., 8, p. 100-2. (June, 1974).

Nuri, K.A., The normal approach between curved surfaces in contact: Wear, 30, 3, p. 321-35. (December, 1974).

Onions, R.A. and Archard, J.F., Pitting of gears and discs: Proc. I. Mech. E., 188, p. 673-82. (1974).

Otto, D.L., Triangular asperities control seal leakage and lubrication: S.A.E. Paper No. 740201, 8p. (1974).

Park, W.H., Wambold, J.C. and Vashlishan, R.G., Prediction of objective passenger comfort from road profile: Trans. A.S.M.E. Ser. B. J. Engng. Ind., 96, p. 503-8. (May, 1974).

Peklenik, J., The statistical mechanism of chip formation in grinding process: Proc. of the Int.Conf. on Prod.Engng., Tokyo, Japan, August 26-29, 1974, 2, p. 51-7. (1974).

Raaijmakers, A.J.A.M., The influence of surface roughness, crystal anisotropy and dislocation density on the beginning of plastic deformation for small contacting bodies. (A survey and interpretation of literature): Jr. Microtecnic, 28, 3, p. , 157-9. (1974).

Rossmanith, H.P., The thermoelastic contact of rough flats and spheres: Mech.Res. Comm., 1, p. 291-6. (1974).

Rowe, G.W., Surface topographic changes at breakdown of thin-film lubrication, a short account of a collaborative C.I.R.P. investigation: Wear, 28, 1, p. 125-30. (April, 1974).

Schuetz, L.S. and Zipfel, G., Theory and construction of multivariate Gaussian surfaces: J.Acoust.Soc.Am., 56, p. 99-109. (July, 1974).

Selvam, M.S. and Radhakrishnan, V., Groove wear, built-up edge and surface roughness in turning: Wear, 30, 2, p. 179-88. (November, 1974).

Shunmugam, M.S. and Radhakrishnan, V., Computation of the three-dimensional envelope for roughness measurement: Int.J.Maoh. Tool Des. Res., 14, p. 211-6. (1974).

Shunmugam, M.S. and Radhakrishnan, V., Two- and three-dimensional analyses of surfaces according to the E-system: Proc.I. Mech. E., 188, p. 691-9. (1974).

Spragg, R.C. and Whitehouse, D.J., An average wavelength parameter for surface metrology: Rev. M. Mec. 20, p. 293-300. (1974).

Spurgeon, D. and Slater, R.A.C., In-process indication of surface roughness using a fibre-optics transducer: Proc. of the 15th Int. Machine Tool Des. & Res. Conf., Birmingham, U.K., September, 1974, p. 339-47. (1974).

Stover, J.C., Roughness measurement by light scattering: US Nat. Bureau of Standards, conf., Boulder, CO, May 22-23, 1974.NBS SP-414. paper 4.4, p. 163-8. (December, 1974).

Tallian, T.E., Pressure and traction rippling in elasto-hydrodynamic contact of rough surfaces: Trans. A.S.M.E. Ser. F. J.Lubr.Tech., 96, 3, p. 398-409. (July, 1974).

Thomas, T.R. and Sayles, R.S., Random-process analysis of the effect of waviness on thermal contact resistance: A.I.A.A. Paper No. 74-691, 8p. (1974).

Thompson, D.L. and Malkin, S., Grinding wheel topography and undeformed chip shape: Proc. of the Int. Prod. Eng.Conf., Tokyo, Japan, August 26-29, 1974, 1, p. 727-32. (1974).

Tsukada, T. and Anno, Y., An analysis of the elastic and plastic deformations of machined surfaces in contact.(lst report, deformations of contacting rough surfaces when the directions of surface asperities cross each other): Bull. J.S.M.E., 17, 105, p. 376-84. (March, 1974).

Tsukado, T. and Anno, Y., An analysis of the elastic and plastic deformation of machined surfaces in contact.(2nd report, comparison between calculated and experimental results on the deformation of rough surfaces in contact): Bull. J.S.M.E., 17, 105, p. 385-92. (March, 1974).

Tsukado, T. and Anno, Y., An evaluation of machined surfaces topography.(1st report, on slope distribution of projections): Bull. Japan. Soc. Precision Engng., 8, p. 141-6. (December, 1974).

Tsukizoe, T., Hisakodo, T. and Miyoshi, K., Effects of surface roughness on shrinkage fits: Bull. J.S.M.E., 17, 105, p. 359-66. (March, 1974).

Vashisht, S.K. and Radhakrishnan, V., Surface studies with a gloss meter: Tribology Int., 7, 2, p. 70-6. (April, 1974).

Wanheim, T., Bay, N. and Petersen, A.S., A theoretically determined model for friction in metal working processes: Wear, 28, 2, p. 251-8. (May, 1974).

Warburton, C., Surface roughness of graphite and its effect on friction factor: Proc. I. Mech. E., 188, p. 457-60, (I974).

Westberg, J., The two-aperture glossmeter - a new method of assessing the visual quality of surfaces and coatings: S.M.E. Paper No. FC74-649, 17p. (1974).

Whitehouse, D.J., Theoretical analysis of stylus integration: Ann. C.I.R.P. 23, p. 81-2. (1974).

Whitehouse, D.J., The measurement and analysis of surfaces: Tribology Int., 7, no. 6, p. 249-59. (December, 1974).

Whitehouse, D.J., Vanherck, P., De Bruin, W. and Van Luttervelt, C.A., Assessment of surface typology analysis techniques in turning: Ann. C.I.R.P., 23 (2), p. 265-82. (1974).

Wilson, G.P., Automatic levelling of profile measuring systems: S.M.E. Paper No. IQ74-138, 9p. (1974).

Wilson, W.R.D. and Delmolino, W.P., The influence of surface roughness on the lubrication breakdown in upsetting between overhanging dies: Wear, 29, 1, p. 1-10. (July, 1974).

Young, R.D. and Bryan, J.B., The role of NBS in the US National Measurement System for surface finish: Ann. C.I.R.P., 23, p. , 83-4, (1974).

Young, R.D. and Teague, E.C., Measurement and characterization of surface finish: Proc. of Symp., Prop. of electrodeposits, their meas. and significance. New York, U.S.A., October 14-17, 1974, p. 22-49. (1975).

## 1975

Anon: Surface analyzer checks up on electropolishing: Tool Prod., 41, p. 81. (May, 1975).

Atala, H.F. and Rowe, G.W., Surface roughness changes during rolling: Wear, 32, 2, p. 249-68. (April, 1975).

Bay, N., Wanheim, T. and Petersen, A.S., Ra and the average effective strain of surface asperities deformed in metal-working processes: Wear, 34, 1, p. 77-84. (August, 1975).

Bayer, R.G. and Sirico, J.L., The influence of surface roughness on wear: Wear, 35, 2, p. 251-60, (December, 1975).

Bush, A.W., Gibson, R.D. and Thomas, T.R., The elastic contact of a rough surface: Wear, 35, 1, p. 87-111. (November, 1975).

Dean, S.K. and Doyle, E.D., Significance of grit morphology in fine abrasion: Wear, 35, 1, p. 123-9. (November, 1975).

Egorov, I.V., Komarovskii, O.K. and Luk'yanov, V.S., Computer research on surface roughness: Meas. Tech., 18, p. 67-9. (January, 1975).

Eiss, N.S. and Warren, J.H., The effect of surface finish on the friction and wear of PCTFE plastic on mild steel: S.M.E. Paper No. 1Q75-125 13p. (1975).

Fowles, P.E., The statistical application of a thermal EHL theory for individual asperity - asperity collisions to the sliding contact of rough surfaces: Trans. A.S.M.E. Ser. F., J. Lubr. Tech., 97, 2, p. 311-20. (April, 1975).

Fujimoto, Y., Iridescent unevenness of precisely turned surface: Bull. Japan.Soc. Precision Engn., 9, p. 7-12, 18. (1975).

Fuller, K.N.G. and Tabor, David, The effect of surface roughness on the adhesion of elastic solids: Proc. Roy. Soc. Lond. A345, p. 327-42. (1975).

Gee, S., King, W.L., and Hegmon, R.R., Pavement texture measurement by laser, a feasible study: Surface Texture Versus Skidding, Measurements, Frictional Aspects and Safety features of Tire-Pavement Interactions. A.S.T.M. publication STP 583, p. 29-41. (1975).

Gilbert, Y, and Collot C., Further research on adhesive-steel adhesiveness according to the micro-geometrical state of levelled and sand-blasted surfaces: Matériaux et Constructions, 48, p. 425-437 (November/December 1975).

Gray, M.J. and Skelton, W.J., A finite element analysis for the elastohydrodynamic lubrication of high pressure plain gland reciprocating seals operating at pressure up to 700MN/m2: BHRA Fluid Eng., Paper A3, p. 43-62 (September 1975).

Halling, J., Principles of tribology: Macmillan, London. 417p. (1975).

Henry, J.J. and Hegmon, R.R., Pavement texture measurement and evaluation: Surface Texture versus Skidding, Measurements, Frictional Aspects and Safety Features of Tire-Pavement Interactions, A.S.T.M. Publication STP 583, p. 3-17. (1975).

Hisakado, T., Surface roughness and deformation of contact asperities between a rough and a flat surface: Wear, 35, 1, p. 53-61. (November, 1975).

ISO, Instruments de mesurage de la rugosité des surfaces par la méthode du profil - Instruments à palpeur - aiguille, à transformation progressive du profil - Profilomètres à contact du systéme, M ISO standard 3274: Geneva, International Organisation for Standardisation, 1975.

Johnson, K.L. and Gray, G.G., Development of corrugations on surfaces in rolling contact: Proc. I. Mech. E., 189,. 45-58. (1975).

Kuchin, A.A., Optical instruments for surface roughness measurements: Meas. Tech., 18, p. 54-8. (January, 1975).

Lau, H. and Harman, C.M., Externally pressurized compliant air bearing operating on a rough moving surface: Trans. ASME, Ser. F., J. Lubr. Tech., 97, 1, p. 63-8. (January, 1975).

Lebiedzik, J. and White, E.W., Multiple detector method for quantitative determination of microtopography in the SEM: Proc. 8th Annual Symp. Scanning Electron Microscopy, Illinois Inst. of Technol. Res.Inst., Chicago, U.S.A., April, 1975, p. 101-88. (1975).

Leger, D., Mathieu, E. and Perrin, J.C., Optical surface roughness determination using speckle correlation technique: Appl.Opt., 14, p. 872-7, (April, 1975).

Lenz, R.O., Watching those international surface standards: S.M.E. Paper No. IQ75-138, 7p. (1975).

Leroy, A. and Viseur, B., Efficiency of current methods of microgeometric surface analysis: Rev.M.Mec., 21, p. 41-7. (March, 1975).

Liu, J.Y., Tallian, T.E. and McCool, J.I., Dependence of bearing fatigue life on film thickness to surface roughness ratio: A.S.L.E. Trans., 18, 2, p. 144-52. (April, 1975).

Lopovok, T.S. and Martirosov, D.S., New parameter for evaluating the step of the profiles predominant harmonic: Meas.Tech., 18, p. 824-5. (1975).

Lowell, J., Contact electrification of metals: J.Phys.D, Appl. Phys., 8, p. 53-63. (1975).

Luk'yanov, V.S., Metrological provision for surface roughness measurement: Meas.Tech., 18, p. 47-51. (January, 1975).

Maiya, P.S., Geometrical characterization of surface roughness and its application to fatigue crack initiation: Mater. Sci. Engng., 21, 1, p. 57-62. (October, 1975).

Makushkin, A.P., Calculation of the contact area between solid surfaces with polymer coatings: Mech. Sci. Mashinovedeniye, 5, p. 46-50 (1975).

Mandelbrot, B.B., Stochastic models for the Earth's relief, the shape and the fractal dimension of the coastlines, and the number-area rule for islands: Proc. Nat. Acad. Sci. USA, 72, 10, p. 3825-3828 (October 1975).

Matsuno, Y., Yamada, H., Harada, M. and Kobayashi, A., Microtopography of the grinding wheel surface with SEM: Ann, C.I.R.P., 24, 1, p. 237-42. (1975).

Moes, A., Relation entre les critères d'état de surface et les surfaces contrôlées: Rev. M. Mec., 21, 1, p. 57-60 (1975).

Moore, D.F., Principles and applications of tribology: Pergamon Press, Oxford UK, 388p. (1975).

Moore, D.F., Design of texture in stand ard surfaces: In, Surface Texture Versus Skidding, Measurements, Frictional Aspects, and Safety Features of Tire-Pavement Interactions. A.S.T.M. Publication STP 583, p. 62-74. (1975).

Nicolls, M.O., The measurement of surface finish, Part I: Metrology and Inspection, p. 35-42. (April, 1975).

Nicolls, M.O., The measurement of surface finish.Part 2: Metrology and Inspection, p. 27-30. (July/August, 1975).

Nuri, K.A. and Halling, J., The normal approach between rough flat surfaces in contact: Wear, 32, 1, p. 81-93. (March, 1975).

Obradovich, K.A. and Solodukho, F.M., Reflectometric methods of surface roughness measurement: Meas.Tech., 18, p. 59-62. (1975).

Ohtsubo, J., Fujii, H., and Asakura, T., Surface roughness measurement by using speckle pattern: Japan.J.Appl. Phys., 14, Suppl. 14-1. p. 293-8. (1975).

Osman, M.O.M. and Sankar, T.S., Profile characteristics of manufactured surfaces using random function excursion technique. Part 2, application: Trans. ASME Ser. B. J. Engng.Ind., 97, p. 196-202. (February, 1975).

Prakash, A., Struik, K. and Koning, J., Surface roughness, The measurement of spark erosion reference standards: Int.J.Prod. Res., 13, p. 291-302. (1975).

Rudzit, Ye. A., Accuracy of surface roughness parameter determinations: Meas. Tech., 18, p. 63-6. (1975).

Sankar, T.S. and Osman, M.O.M., Profile characteristics of manufactured surfaces using random function excursion technique.Part 1, theory: Trans.ASME Ser. B. J. Engng.Ind., 97, 1, p. 190-5. (February, 1975).

Schneider, E.J., The future of surface quality and surface geometry standards in the United States and abroad: S.M.E. Technical Paper No.IQ75-135, 15p. (1975).

Selvam, M.S., Tool vibration and its influence on surface roughness in turning: Wear, 35, 1, p. 149-57. (November, 1975).

Selvam, M.S. and Radhakrishnan, V., Study of side flow in simple Vee groove cutting and its influence on surface finish: Acta Technica Academiae Scientiarum Hungaricae, 81, 1-2, p. 75-90 (1975).

Solodukho, F.M., Investigating the microgeometry of the block gauge's working surface: Meas. Tech., 18, p. 1171-5. (August, 1975).

Tabor, David, A simplified account of surface topography and the contact between solids: Wear, 32, 2, p. 269-71. (April, 1975).

Thomas, T.R., Recent advances in surface measurement and analysis of surface microgeometry: Wear, v. 33, no. 2, p. 205-233, (1975).

Thomas, T.R., Holmes, C.F., McAdams, H.T. and Bemard, J.C., Surface features influencing the effectiveness of lip seals, a pattern - recognition approach: S.M.E. Paper No. IQ75-128, 16p. (1975).

Trmal, G. and Tobias, S.A., Some aspects of unbalance in the wheel-spindle assembly of cylindrical grinding wheels: Ann. C.I.R.P., 21, I, p. 89-90. (1975).

Tsukada, T. and Anno, Y., Analysis of the elastic and plastic deformation of machined surfaces in contact.4th report, deformation of contacting rough surfaces when directional asperities and non-directional ones are in contact: Bull. J.S.M.E., 18, 116, p. 201-7. (February, 1975).

Tsukada, T. and Anno, Y., An evaluation of machined surface topography.(2nd report, on statistics of surface asperity heights): Bull. Japan.Soc.Precision Engng., 9, p. 1-6. (March, 1975).

Tsukada, T. and Anno, Y., An analysis of the elastic and plastic deformations of machined surfaces in contact.(5th report, formulae of deformations of plane joints machined by various methods for practical use): Bull. J.S.M.E., 18, 118, p. , 34-41. (April, 1975).

Tsukada, T. and Anno, Y., Evaluation of machined surface topography.3. Relationship between sampling lengths and statistic of surface asperities: Bull. Japan.Soc.Precision Engng., 9, 2, p. 41-6. (June, 1975).

Vanherck, P., Typologie des surfaces: Rev. M. Mec., 21, 1, p. 29-40 (1975).

Vashisht, S.K. and Radhakrishnan, V., Gloss meter for surface evaluation: J.Inst.Eng. (India). 55, p. , 144-8. Part ME3, (1975).

Veretennikov, V.I. and Girshfel'd, L.Z., Status and prospects for the development of contact instruments for measuring surface roughness: Meas. Tech., 18, p. 52-3. (January, 1975).

Verrill, J.F., Diffraction grating ruling tool alignment by analysis of traced groove profile: J.Phys.E. Sci.Instrum., 8, 6, p. 522-5. (June, 1975).

von Weingraber, H., Zur problematik der oberflächennormung (problems of surface standardization): Rev. M. Mec., 21, 1, p. 49-56 (1975).

Whitehouse, D.J., Modern trends in the measurement of surfaces: Rev. M. Mec., 21, p. 19-28. (March, 1975).

Whitehouse, D.J., Some ultimate limits on the measurement of surfaces using stylus techniques: Meas.Control, 8, p. 147-51. (April, 1975).

## 1976

Abou-Aly, M., Ein Systematischer Ueberblick Ueber Die Oberflaechenpruef Und Messverfahren.(Systematic Review of Surface Testing and Surface Measuring Methods): Metalloberflaeche Angew Elektrochem v. 30 no. 12 Dec 1976 p. 569-572.

Bay, N. and Wanheim, T., Real area of contact and friction stress at high pressure sliding contact: Wear, 38, p. 201-209 (1976).

Bay, N. and Warheim, T., Real area of contact between a rough tool and a smooth workpiece at high normal pressures: Wear, 38, p. 225-234 (1976).

Bel'for, M.A., Kuz'min, Y.U.P., Device to Measure Surface Irregularity: Meas Tech v. 19 no. 9 Sept. 1976 p. 1277-1279.

Berny, F., Optical methods for rough surface measurements: Tribos. Imeko 7 Congress, BDM/234/1-7 (1976).

Burney, F.A. and Wu, S.M., Evaluation of coated abrasive wear via statistical parameters: Wear, 36, p. 225-234 (1976).

Bush, A.W., Gibson, R.D. and Keogh, G.P., The limit of elastic deformation in the contact of rough surfaces: Mech. Res. Comm., 3, p. 169-174 (1976).

Chan, E.C., Marton, J.P., Brown, J.D., Evaluation of Surface Roughness of Metal Films by Transmission Electron Microscopy and Ellipsometry: J Vac Sci Technol v. 13 no. 4 July-Aug. 1976, p. 981-984.

Chandley, P.J., Surface roughness measurements from coherent light scattering: Opt Quantum Electron v. 8 no. 4 Jul 1976 p. 323-327.

Chandley, P.J., Determination of the autocorrelation function of height on a rough surface from coherent light scattering: Opt Quantum Electron v. 8 no. 4 Jul 1976 p. 329-333.

Ciesielski, Zygmunt, Szlezak, Feliks, Linear Bearing Portion of a Surface Profile: Przegl. Mech. v. 35 no. 11 Jun 15 1976 p. 378-381.

de Billy, Michel, Cohen-Tenoudji, Frederic, Jungman, Alain, Quentin, Gerard J., Possibility of Assigning a Signature to Rough Surfaces using Ultrasonic Backscattering Diagrams: IEEE Trans Sonics Ultrason v. SU-23 no. 5 Sep 1976 p. 356-363.

Demkin, N.B. Izmailov, V.V. and Karotkov, M.A., Estimation of the deformation of rough spheres and cylinders in compression: Wear, 39, p. 63-82 (1976).

Dickerson, R.S. and Mace, D.G.W., A high-speed road profilometer - preliminary description: TRRL Suppl. Rep. 182 (1976).

Dyson, A., The failure of elastohydrodynamic lubrication of circumferentially ground discs: Proc. Inst. Mech. Engrs., 190, 52 (1976).

Eiss, N.S. Jr., Warren, J.H., Current Advances in Surface Characterization: ASNE Pap no. 76-DET-88 for Meet Sep.26-29 1976 8 p.

Evans, D.C., The influence of abrasive fillers on the wear properties of PTFE-based composites: Royal Aircraft Estab., Tech. Rep. 75144 (February 1976).

Fromson, R.E. (Westinghouse Electr Corp), Shum, L.Y., Brecker, J.N., Universal Surface Texture Measuring System: SME Tech Pap Ser IQ at Southeast Conf & Tool Show, Orlando, Fla, Dec 6-8 1976 Pap IQ76-597, 19 p.

Geva, M. Lenz, E. end Dadiv, S., Peripheral Electrochemical grinding of sintered carbides - effect on surface finish: Wear, 38, p. 325-339. (1976).

Golden, J.M., The Evolution of asperity height distributions of a surface subjected to wear: Wear, 39, p. 25-44. (1976).

Halling, J., A contribution to the theory of friction: Wear, 37, p. 169-184 (1976).

Harrison, K. and Bhattacharyye, S.K., Measurement of coated abrasive surfaces: Wear, 39, p. 335-343. (1976).

Hart, A.C. and Tottle, L.G., The identification of roughness defects in decorative nickel/chromium electrodeposits: Inst. of Metal Finishing, 54, p. 91-96 (1976).

Hisakado, T., Influence of surface roughness and work - Hardened layers on the contact between a rough and a flat surface: Wear, 37, p. 41-51. (1976).

Jones, A.M. O'Callaghan, P.W. and Probert, S.D., The significance of the surface auto-correlation function in the prediction of micro-contact size distribution: Wear, 38, p. 185-188. (1976).

Kaganovskii, Yu.S. (Khar'kov State Univ. Ukr SSR), Frelikher, V.D., Grishchenko, V.V., Popovo, I.M., Estimation of Parameters of Microroughness on the Surface of Solids by the Light-scattering Method: Instrum Exp Tech v. 19 no. 4 pt 2 Jul-Aug, 1976, p. 1224-1226.

Knoche, Horst, Weber, Horst, Weigel, H.V. Blech, Measurement Procedure for the Description of the Surface of Cold-Rolled Sheet Metal: Profile v. 23 no. 1 Jan 1976 p. 3-5.

Krishna, M. Bala, Hullender, D.A., Analytical Model for Guide-way Surface Roughness: Intersoc Conf on Transp, 4th Annu. Proc. Los Angeles, CA. Jul 16-23 1976 Pap C & C 4, 6p. ASME, New York, 1976.

Lehmann, Werner, Oberflaechenpruefung Mittels Licht-Interferenz (Surface Testing by Light Interference): Metalloberflaeche Angew Elektrochem v. 30 no. 12 Dec. 1976 p. 579-582.

Lonardo, Pietro M., New method of Contactless Measurement of Surface Roughness: Ing. Mecc., v. 25, no. 3 Mar. 1976 p. I21-124.

Lowell, Harry N. (Itek Meas Sys), New Laser Based Surface Roughness and Analysis: SME Tech Pap Ser IQ at Southeast Conf & Tool Show, Orlando, Fla, Dec 6-8 1976 Pap IQ76-587, 21 p.

Luk'yanov, V.S., Momarovskii, 0.K., Error in Determining Surface-Roughness Parameters by Feeler Probes: Meas Tech v. 19 no. 12 Dec. 1976 p. 1707-1710.

Matsui, Seiki (Tohoku Univ. Sendai, Jpn), Tamaki, Jun'ichi, Study on the Pitch of Ground Surface Roughness Curve: Bull Jpn. Soc. Precis. Eng. v. 10 no. 4 Dec 1976 p. 161-162.

Mitchell, L.A. and Osgood, C., A theory of friction and wear based on a new characterisation of asperity interactions: Wear, 40, p. 203-222 (1976).

Nekrasov, V.P., Possibilities of Surface Lapping with Oriented Shaping of the Surface Profile: Russ Eng J v. 56 no. 2 1976 p. 62-65.

Nizhin, A.M., Vesnina, V.A., Mariglazova, N.B., Litvinova, G.K., Non-Destructive Method of Inspecting the Surface Roughness of Small-Diameter Channels: Sov. J. Opt. Technol v. 43 no. 7 Jul 1976 p. 441-443.

Nuri, K.A. and Halling, J., The effect of the size of the nominal area on the contact behaviour of surfaces: Wear, 37, p. 77-86 (1976).

Obradovich, K.A., Valueva, N.N., Determination of the correction for the Radius of Curvature of the Sensitive Needle of a Profilograph: Neas Tech v. 19 no. 4 Apr. 1976 p. 535-538.

O'Callaghan, M. and Cameron, M.A., Static contact under load between nominally flat surfaces in which deformation is purely elastic: Wear, 36, p. 79-97. (1976).

O'Hara, K., Observation of surface profiles and the nature of the contact between polymer films by multiple beam interferometry: Wear, 39, p. 251-262. 1976.

Pandit, S.M., Suratkar, P.T. and Wu, S.M., Mathematical model of a ground surface profile with the grinding process as a feedback system: Wear, 39, p. 205-217 (1976).

Ramachandran, P. and Vaidyanathan, S., Statistical Evaluation of Parameters in Grinding: Wear, 36, p. 119-125. (1976).

Raszillier, Veturia (INCREST, Bucharest, Rom.)., Description of Rough Surfaces and its Investigation by Rayleigh Waves: Rev Roum Sci Tech Ser Mec Appl v. 21 no. 2 Apr-Jun 1976 p. 251-256.

Rossmanith, H.P., Stochastic analysis of non-top-top contacting rough surfaces: Wear, 37, p. 201-208.(1976).

Sarkar, A.D., Wear of Metals: Pergamon Press, Oxford, U.K. (1976).

Sayles, R.S., Thomas, T.R., Mapping a Small Area of a Surface: J Phys E (Sci Instrum) v. 9 no. 10 Oct. 1976. p. 855-861.

Sayles, R.S., Thomas, T.R., Stochastic Explanation of some Structural Properties of a Ground Surface: Int J Prod Res v. 14 no. 6 Nov. 1976 p. 641-655.

Sayles, R.S. and Thomas, T.R., Thermal conductance of a rough elastic contact: Appl. Energy, 2 (1976).

Scott, W. and Baul, R.M., Identification of grinding wheel wear using random process analysis: Wear, 39, p. 361-375 (1976).

Selvam, M.S. and Radhakrishnan, V., Determination of the direct and indirect influences of groove wear and built-up edge on surface roughness in turning by multiple correlation technique: Int. J. Prod. Res., 14, 3, p. 415-420 (1976).

Shunmugam, M.S., Radhakrishnan, V., Comparison of the mean lines of Surface Profiles obtained from Different Electrical Filters: Isr.J.Technol. v. 14 no. 6 1976 p. 253-260.

Shunmugam, M.S. and Radhakrishnan, V., An analysis of the reference lines of the surface profile and its true replica: Wear, 40, p. 155-163 (1976).

Shunmugam, M.S., Radhakrishnan, V., Comparison of Different Methods for Computing the Two-Dimensional Envelope for Surface Finish Measurements: Comput Aided Des. v. 8 no. 2 Apr 1976 p. 89-93.

Shunmugam, M.S., Radhakrishnan, V., Selection and fitting of Reference Line for Surface Profiles: Inst.Mech.Eng.(Lond.)Proc. v. 190 no. 7 1976 p. 1973-201.

Spurr, R.T., The roughness of abraded metal surfaces: Wear, 40, p. 383-387.(1976).

Stover, J.C., Spectral-Density Function gives surface roughness: Laser Focus v. 12 no. 2 Feb. 1976 p. 83-85.

Sukehire, Tsuyoshi (Kurume Tech Coll, Komorino-machi, Jpn), Hiroo, Yasuaki, Pukuda, Koichi, Tooth Surface Roughness Tested with the Arithmetic Base Circle: Bull Jpn. Soc. Precis. Eng. v. 10 no. 4 Dec 1976 p. 163-164.

Sun, Dah-Chen, and Chen, Kuo-Kuang, First Effects of Stokes Roughness on Hydrodynamic Lubrication: ASME Pap no. 76-Lub-12 for Meet Oct. 5-7 1976 8 p.

Suratkan, P.T., Pandit, S. M. and Wu, S.M., A stochastic approach to the mode of deformation and contact between rough surfaces: Wear, 39, p. 239-250 (1976).

Swain, M.V. and Jackson, R.E., Wear-like features on Natural Fault Surfaces: Wear, 37, p. 63-68 (1976).

Taganov, O.K., Effect of Secondary Structure on the ability of a Rough Surface to Scatter Light: Sov J Opt Technol. v. 43 no. 9 Sept. 1976, p. 577-578.

Takahashi, N. and Okada, K., Microscopic changes in surface topography and elemental concentration on the track formed by the intermittent motion of friction: Wear, 38, p. 177-180 (1976).

Takeyama, H., Sekiguchi, H. Murata, R. Matsuzaki, H., In-process detection of Surface Roughness in Machining: Ann CIRP v. 25n 1 1976 p. 467-471.

Tanner, L.H., The use of laser light in the study of metal surfaces: Optics & Laser Tech., p. 113-116 (June 1976).

Tanner, L.H. and Fahoum, M., A study of the surface Parameters of Ground and Lapped Metal Surfaces, Using Specular and Diffuse Reflection of Laser Light: Wear, 36, p. 299-316.(1976).

Thomas, T.R., Recent advances in the measurement and analysis of surface microgeometry: Wear, 33, 2, p. 205-33. (July, 1976).

Tonder, Kristian, Lubrication of Surfaces Having Area-Distributed Isotropic Roughness: ASME Pap no. 76-Lub-7 for Meet Oct. 5-7 1976 6 p.

Tsukizoe, Tadasu (Osaka Univ. Jpn.), Sakamoto, Tohru, Friction between hard rough and soft smooth surfaces: Bull JSME v. 19 no.127 Jan 1976 p. 54-60.

Vuri, K.A. and Halling, J., The effect of the size of the nominal area on the contact behaviour of surfaces: Wear, 37, p. 77-86. (1976).

Whitehouse, D.J., Approximate methods of assessment of surface topography parameters: Annals of CIRP, 25, p. 461-465 (1976).

Witzke, F.W., and Amstutz, H.N., Sources of error in Surface Texture Measurement: SME Tech Pap Ser IQ at Southeast Conf. & Tool Show, Orlando, Fla, Dec 6-8 1976 Pap IQ76-585 14 p.

Wolff, H., Prueffung Der Oberflaechen-Rauheit Mit Tastschnitigeraeten. (Surface Roughness Testing with Tracer Cutting Devices): Werkstatt Betr v. 109 no. 11 Nov. 1976 p. 667-672.

Yandell, W.O. and Gopalan, M.K., Methods of measuring and characterising the surface geometry of road stones: Wear, 37, p. 103-112 (1976).

## 1977

Abou-Aly, M., Messverfahren zur beschreibung der oberflaeche mit hilfe des lasers. (Measurement Techniques for Describing Surfaces with the Aid of Lasers): Metalloberflaeche v. 31 no. 12 Dec. 1977 p. 568-577.

Anon: Closing the Gap in Surface Metrology: Manuf.Eng. v. 79 no. 1 Jul. 1977 p. 41-43.

Brecker, J.N. Fromson, R.E., Shum, L.Y., Capacitance-based Surface Texture Measuring System: Ann CIRP v. 26 no. 1 and 2 1977, Manuf Technol. Gen.Assem. of CIRP, 27th Delhi, India, Aug 29 Sept. 3 1977. Tech. Rundsch, 1977 p. 375-377.

Cardew, A. St.E., Surface Smoothness Measurement: Chart Mech.Eng.v. 24 no. 3 March. 1977 p. 80-83.

Childs, T.H.C., The persistence of roughness between surfaces in static contact: Proc. R. Soc. Lond. A353, p. 35-53 (1977).

Church, E.L., Jenkinson, H.A., Zavada, J.M., Measurement of the Finish of Diamond-turned Metal Surfaces by Differential Light Scattering: Opt.Eng. v. 16 no. 4 Jul-Aug 1977 p. 360-374.

Czichos, H., Influence of asperity contact conditions on the failure of sliding elastohydrodynamic contacts: Wear, 41, p. 1-14.(1977).

De Gee, A.W.J., Selection of materials for lubricated journal bearings - determination of the critical roughness parameter: Wear, 42, p. 251-261 (1977).

Dornfeld, D.A. and Wu, S.M., An investigation of Ground Wood Surfaces as related to pulp and stone characteristics: Wear, 42, p. 163-175 (1977).

Edmonds, M.J., A.M. Jones, P.W. O'Callaghan and S.D. Probert, A Three-Dimensional Relocation Profilometer Stage: West, 43, p. 329-340 (1977).

Figgis, D.L., A.D. Sarkar, A Method of Calculating Steady State Wear Rate of Metals from Profilometric Traces: Wear, 48, p. 351-365 (1977).

Francis, H.A., Application of Spherical Indentation Mechanics to Reversible and Irreversible contact between Rough Surfaces: Wear, 45, p. 221-269 (1977).

Fugelso, Mark, Wu, S.M., Digital Oscillating Stylus Profile Measuring Device: Int. J. Mach. Tool Des Res v. 17 no. 3 1977 p. 191-195.

Fujii, H., Asakura, T., Development of Laser Speckle and its Application to Surface Inspections: Appl.Opt. v. 16 no. 1 Jan. 1977 p. 180-183.

Fujii, H., Lit, John W.Y., Measurement of Surface Roughness using Dichromatic Speckle: Opt.Commun v. 22 no. 2 Aug. 1977 p. 231-235.

Golden, J.H., The Actual Contact Area of Moving Surfaces: Wear, 42, p. 157-162.(1977).

Gray, M.J. and Skelton, W.J., The lubrication and wear of small reciprocating lip clearance seals for high pressure applications: Dept. Mech. Ind. Eng., Queen's Univ., Belfast, Report 881 (1977).

Heitmann, D., Permien, V., Determination of Surface Roughness from Light Scattering Measurements: Opt.Commun v. 23 no. 1 Oct. 1977 p. 131-134.

Hisakado, T., The influence of surface roughness on abrasive wear: Wear, 41, p. 179-190.(1977).

Hisakado, T., Effects of Surface Roughness and Surface Films on Contact Resistance: Wear, 41, p. 345-359 (1977).

Hryniewicz, T., Tadeusz Karpinski and Czeslaw Lukianowicz, The Evaluation of Electrolytically Polished Surfaces: Wear, 45, p. 335-343.(1977).

Idesawa, Masanori, Yatagai, Toyohiko, Soma, Takashi, Scanning Moire Method and Automatic Measurement of 3-D Shapes: Appl.Opt. v. 16 no. 8 Aug. 1977 p. 2152-2162.

Idrus, N., Williams, A., Three Dimensional Characterisation of Engineering Surfaces: Natl.Conf.Publ.Inst.Eng.Aust. Aust.Conf.on Manuf. Eng. Prepr. of Pap.Suppl and Abstr. Adelaide, Aug. 17-19 1977. Inst.of Eng. Aust. (Natl.Conf.Publ. no. 77/7), Barton, 1977 p. 135-139.

Jahanmir, S. and N.P. Suh, Surface Topography and Integrity Effects on Sliding Wear: Wear, 44, p. 87-99 (1977).

Karpinski, T., Lukianowicz, Cz., Surface Roughness Measurements by Photometric Method: Ann CIRP v. 26 no. 1 and 2 1977, Manuf. Technol. Gen. Assem. of CIRP, 27th, Delhi, India, Aug29-Sep3 1977. Tech Rundsch. 1977 p. 371-374.

Kato, Mazunori, Murota, Tadao, Ishida, Akira, On Measurement of Three Dimensional Deformation Using Moire Method and Light Slicing Method: Bull JSME v. 20 no. 146 Aug.1977 p. 915-921.

Kaus, G., Kempf, J., Simultaneous AES-SIMS Measuring Method: Proc.of the Int.Vac.Congr, 7th, and the Int.Conf. on Solid Surf. 3rd, of the Int. union for Vec.Sci.Tech and Appl, Vienna, Austria, Sep. 12-16 1977, Int.Union for Vac.sci.Tech. and Appl. Brussels, 1977 v. 3 p. 2277-2280.

Keeping, K.G., Reed, E.W., Jennings, N., Novel Technique for Monitoring Surface Finishes: Proc.of the Int.Conf. on Prod.Eng. 27th, New Delhi, India, Aug. 27-Sept. 4 1977. Inst.of Eng. (India) Calcutta, 1977 v. 2, 6 p.

Ketkovich, A.A., Molodkina, N.Yu, Strokov, V.A., Karavanov, V.A., Instrument for measuring the depth and dimensions of surface microdefects: Sov.J. Nondestr. Test v. 13 no. 3 May-Jun. 1977 p. 340-341.

King, T.G., Whitehouse, D.J. and Stout, K.J., Some topographic features of the wear process - theory and experiment: Annals of CIRP, 25, 1, p. 351-356 (1977).

Komanduri, R. and Shaw, M.C., A Mechanism for the accelerated Wear of High Speed Sliding Surfaces in the Presence of Spherical Particles: Wear, 42, p. 177-185 (1977).

Lin, G.C.I., Shea, T., Hoang, K., Measurement of Surface Roughness with a Laser Beam: Natl.Conf.Publ.Inst.Eng.Aust. Aust.Conf. on Manuf. Eng. Prepr. of Pap. Suppl. and Abstr., Adelaide, Aug. 17-19 1977. Inst.of Eng.Aust. (Natl. Conf. Publ. no. 77/7), sarton, 1977 p. 132-134.

Masouros, G., Dimarogonas, A., and Lefas, K., A Model for Wear and Surface Roughness Transients during the Running-in of Bearings: Wear, 45 p. 375-383 (1977).

Menu, M., Roblin, M.L., Determination of Roughness by Correlatin Speckles in the Image of the Diffusing Surface: Opt.Commun v. 21 no. 3 Jun 1977 p. 355-359.

Moeller, K.H., Objektive Glanzbeurteilung Ebener Oberflaechen.(Objective Gloss Estimation of Plate Surfaces): Ind.Anz. v. 99 no. 24 Mar. 23 1977 p. 427-428.

Mukherjee, P.K., Basu, S.K., Surface Roughness - A Criterion for Machinability: Mech.Eng.Bull v. 8 no. g Dec. 1977 p. 96-103.

Nellermann, T., Bay, D. and Wanheim, T., Real area of contact and friction stress - the role of trapped lubricant: Wear, 43, p. 45-53 (1977).

Nuri, K.A., The effect of surface films on the static contact of rough flat surfaces: Wear, 42, p. 355-364.(1977).

Phillips, M.J., Whitehouse, D.J., Some Theoretical Aspects of the Measurement of Curved Surfaces: J.Phys.E.(Sci.Instrum.) v. 10 no. 2 Feb. 1977 p. 164-169.

Pollock, H.M., Shufflebottom, P. and Skinner, J., Contact adhesion between solids in vacuum,I. Single-asperity experiments: J. Phys. D, Appl. Phys., 10, p. 127-138 (1977).

Radhakrishnan, V., Application of Inductive Heads for Non-Contact Measurement of Surface Finish: Prof. of the Int.Conf. on Prod.Eng. 27th, New Delhi, India, Aug 27-Sep. 4 1977, Inst.of Eng. (India), Calcutta, 1977 v. 2, 10 p.

Radhakrishnan, V., The application of correlation functions in wear measurements: Wear, 41, p. 169-177.(1977).

Radhakrishnan, V. and Rahman, J.F., A preliminary investigation on the condition of the grinding wheel surface by air flow measurements: Annals of CIRP, 25, 1, p. 147-150 (1977).

Raja, J., Radhakrishnan, V., Analysis and Synthesis of Surface Profiles using Fourier Series: Int. J. Mach. Tool Des Res v. 17 no. 4 1977 p. 245-251.

Rasigni, Monique, Rasigni, Georges, Hua, Chon Trung, Pons, Jacques, Determination of the surface structure autocorrelation function for rough deposits of magnesium: Opt Lett v. 1 no. 4 Oct. 1977 p. 126-127.

Sayles, R.S. and Thomas, T.R., The spatial representation of surface roughness by means of the structure function, a practical alternative to correlation: Wear, 42, no. 2, p. 263-276. (1977).

Sayles, R.S. and Thomas, T.R., The plastic contact of two rough surfaces: Proc. 4th Leeds-Lyon Symp., Lyon, Sept. 1977 (MEP, London, 1978).

Schofield, R.E. and Thornley, R.H., Elastic and Plastic Components of Deflection of Model Asperities in the Shape of Parabolic Cusps: Bull JSME v. 20 no. 146 Aug. 1977 p. l042-l050.

Schulze, Ulrich Wilhelm, Automatic Measurement of Engineering Surfaces, Contactless Measurement of Arched Engineering Surfaces: Baender Bleche Rohre, v. 18 no. 9 Sep. 1977 p. 4024-27.

Selvam, H.S. and Balakrishnan, K., The study of machined surface roughness by random analysis: Wear, 41, p. 287-293.(1977).

Shah, G.N., Bell, A.C. and Malkin, S., Quantitative chracterization of abrasive surfaces using a new profile measuring system: Wear, 41, p. 315-325.(1977).

Sherbiney, E.L., M.G.D. and Halling, J., An Experimental study of the Hertzian contact of surfaces covered with ION-plated films: Wear, 41, p. 365-371 (1977).

Shestakov, E.N., Stolbov, V.S., Latyev, L.D., Chekhovskoi, V., Emittance of Rough Surfaces: Ya. Proc. of the Symp. on Thermophys. Prop. 7th NBS, Gaithersburg, Md, May 10-12 1977, ASME, New York, 1977 p. 279-284.

Shunmugam, M.S., Effectiveness of the E-system in three-dimensional roughness measurement: Proc. Int. Conf. Prodn. Engng. 2, Inst. Engrs. (India), Calcutta (1977).

Staufert, G., Matthias, E., Kennwerte der Obseflaechen-rauhigkeit und Ihre Aussagekraft Hinsichtlich der Charakteristerung Bestimmter Oberflaechentypen. (Surface Roughness Parameters and their Capability of characterising certain Surface Types): Ann CIRP v. 26 no. 1 and 2 1977, Manuf.Technol. Gen.Assem. of CIRP, 27th, Delhi, India, Aug 29-Sep. 3 1977. Tech. Rundsch, 1977 p. 345-350.

Steffensen, H. and Wanheim, T., Asperities on asperities: Wear, 43, no. 1, p. 89-98. (1977).

Stout, K.J., King, T.G. and Whitehouse, D.J., Analytical techniques in surface topography and their application to a running-in experiment: Wear, 43, no. 1, p. 99-115 (1977).

Sturges, D.J., Martin, S.W., Jones, C.K., Wear-related Topography of Ion-Bombarded Surfaces: ASME Pap no. 77-DET-61 for Meet. Sep. 26-30 1977 l0p.

Tanner, L.H, Skin Friction Meter, using the viscosity balance principle, suitable for use with flat or curved metal surfaces: J.Phys.E. (Sci. Instrum) v. 10 no. 3 Mar. 1977 p. 278-284.

Thomas, T.R., and King, M., Surface topography in engineering, a state of the art review and bibliography: British Hydromechanics Research Association, Fluid Engineering Series, v. 3, 103 p. (1977) [651 entries]

Thomas, T.R. and Probert, S.D., Stiffness of machine tool joints, a random-process approach: Trans. Am. Soc. Mech. Engrs., 99B, p. 250-256 (1977).

Thwaite, E.G., The roughness of surfaces: Australian Physicist (November 1977).

Tonder, K., Mathematical Verification of the Applicability of Modified Reynold's Equations to Striated Rough Surfaces: Wear, 44, p. 329-343 (1977).

Tribillon, G., Garcia-Garcia, M., Speckle Image at Two Wavelengths for Measuring the Ray from the Curve of a Cylindrical Surface: Opt.Commun. v. 10 no. 2 Feb. 1977 p. 229-233.

Verkerk, J., and others, Final report concerning CIRP cooperative work on characterisation of grinding wheel topography: Annals of the CIRP, 26/2, 1977.

Welford, W.T., Optical Estimation of Statistics of Surface Roughness from Light Scattering Measurements: Opt.Quantum Electron v. 9 no. 4 Jul. 1977 p. 269-287.

Yatagai, Toyohiko, Idesawa, Masanori, Use of Synthetic Deformed Gratings in Moire Topography: Opt.Commun v. 20 no. 2 Feb. 1977 p. 243-245.

# 1978

Agarwal, R.A., Patki, G.S., Basu, S.K., Influence of Surface Topography on Contact Behaviour of Surfaces: J.Inst.Eng.(India) Mech.Eng.Div. v. 59 pt ME 3 Nov. 1978 p. 139-142.

Anon: Surface Texture (Surface Roughness, Waviness and Lay)., ADSI Stand B46.1 1978 47 p.

Azushima, Akira, Determination of oil film thickness in rolling from the relationship between surface roughness of strip and roll.Investigation into friction and lubrication in cold rolling: Bull JSME v. 21 no. 159 Sep 1978 p. 1402-1407.

Balasubramanian, G., Krishnamurthy, R., Whitehouse, D.G., Surface integrity of honed cylinders: Ann CIRP v. 27 no. 1 1978, Gen Assem of CIRP, 28th, Manuf Technol, Eindhoven, Neth, Aug 28-Sep 2 1978. Tech Rundsch, Berne, Switz, 1978 p. 527-530.

Beers, Winston A., Computer Assistance in Surface Topographic Analysis: Manuf.Eng.Trans. 1978, North Am. Metalwork Res.Conf. Proc 6th, Univ.of Fla. Gainesville, April 16-19 1978, SME, Dearborn, MI, 1978 p. 33-35.

Berry, M.V., and Hannay, J.H., Topography of random surfaces: Nature, v. 273, no. 5663, p. 573, (1978).

Bos, A., A Contribution to the Theory of Wear - The Abrasive Wear of a Soft Surface Against a Rough Hard Surface: Wear, 50, p. 127-144 (1978).

Bush, A.W., Gibson, R.D. and Keogh, G.P., Strongly anisotropic rough surfaces: J. Lub. Tech., ASME, 78-Lub-16 (1978).

Chaka, R.J., The design and development of a highway speed road profilometer: Soc. of Aut. Engs., Paper 780064, (1978).

Chivers, R.C. and Hunt, R.P., The achievement of minimum leakage from elastomeric seals: 8th Int. Conf. on Fluid Sealing, Paper 24 (September 1978).

Church, E.L., Corrections to stylus measurements of surface finish: J. Opt. Soc. Amer. 68, 1425A (1978).

Demkin, N.B., Berkovich, I.I., Kourova, M.S., Statistical Analysis of a Rough-Surface Model: J.Mech.Eng.Sci. v. 20 no. 6 Dec. 1978 p. 315-318.

Demkin, N.B., Korotkov, M.A., Calculations of the Topographic Characteristics of Rough Surfaces by Virtue of Profile: J.Mech.Eng.Sci. v. 20 no. 6 Dec. 1978 p. 303-307.

El-Soudani, S.M., Profilometric analysis of fractures: Metallography, v. 11, no. 3, p. 247-336, (1978).

Elgabry, A.A., Osman, M.O.M., Sankar, T.S., Simplified probabilistic model for two-dimensional profile characterization of surfaces machined by finishing processes: Trans Can Soc Mech Eng v. 5 no. 3 1978-1979 p. 155-164.

Fujii, Hitoshi, Lit, John W.Y, Surface roughness measurement using dichromatic speckle pattern, An experimental study: Applied Optics, v. 17 no. 17 Sep 1 1978 p. 2690-2694.

Hard, S., Nilsson, O., Laser Heterodyne Apparatus for Roughness Measurements of Polished Surfaces: Appl. Opt. v. 17 no. 23 Dec. 01 1978 p. 3827-3836.

Harvie, A., Beattie, J.S., Surface Texture Measurement: Prod.Eng (London) v. 57 no. 2 Feb 1978 p. 25-29.

Hasegawa, M., Tsukizoe, T., Generating Mechanism of Surface Roughness by Random Cutting Edges: J.Mech.Eng.Sci. v. 20 no. 4 Aug. 1978 p. 197-200.

Heitmann, D., Permien, V., Transition Radiation from Rough Surfaces: Opt.Commun v. 25 no. 2 May 1978 p. 196-198.

Hisakado, T., Influence of Surface Roughness on Friction and Wear in Boundary Lubrication: J.Mech.Eng.Sci. v. 20 no. 5 Oct. 1978 p. 247-254.

Jeswani, M.L., Roughness and Wear Characteristics of Spark-Eroded Surfaces: Wear, 51, p. 227-236 (1978).

Kamash, K.M.A., Robson, J.D., Application of Isotropy in road surface modelling: J Sound Vib v. 57 no. 1 Mar. 8 1978 p. 89-100.

Karlsson, R.I., Effect of irregular surface roughness on the frictional resistance of ships: Proc.of the Int.Symp. on Ship Viscous Resist. Goteborg. Swed. Aug 31 - Sep. 1 1978. Sponsored by Swed. State Shipbuild. Exp. Tank, SSPA.Available from Liber. Distrib. Vallingby, Swed. p. 9.1-9.20.

Kern, Richerd W., Optical Inspection of Ground Metal Surfaces: Electro. Opt. Syst. Des. v. 10 no. 7 Jul. 1978 p. 20-27.

King, M.J. and Thomas, T.R., Stylus measurement of the microgeometry of a coated surface: J. Coatings Tech., 50, 643, p. 56-61 (August 1978).

Kudryavtsev, V.A., Shanin, V.I., Shapov, V.S., Analysis of the Metrological Possibilities of a Coherent Optical Method of Inspecting the Shape of Complex Surfaces: Sov.J.Opt.Technol. v. 45 no. 11 Nov. 1978 p. 678-680.

Leushina, T.M., Testing of aspherical surfaces on a goniometer: Sov. J. Opt Technol v. 45 no. 9 Sep 1978 p. 544-547.

Lewkowicz, A.K., Musker, A.J., Surface roughness and turbulent wall friction on ship-hulls, Interaction in the viscous sublayer: Proc. of the Int Symp on Ship Viscous Resist, Goteborg, Swed, Aug. 31-Sept 1 1978. Swed State Shipbuild Exp. Tank, SSPA. Liber Distrib. Vallingby, Swed, p. 10.1-10.22.

Londardo, P.M., Testing a new optical sensor for in-process detection of surface roughness: Ann CIRP v. 27 no. 1 1978, Gen Assem of CIRP, 28th Manuf. Technol. Eindhoven, Neth. Aug. 28-Sep. 2 1978. Tech Rundsch. Berne, Switz. 1978 p. 531-534.

McCool, J.J., Characterization of Surface Anisotropy: Wear, 49 p. 19-31. (1978).

Mitsui, K., Sato, H., Frequency characteristics of cutting process identified by an in-process measurement of surface roughness: Ann CIRP v. 27 no. 1 1978, Gen Assem of CIRP, 28th Manuf Technol, Eindhoven, Neth, Aug 28-Sep 2 1978. Tech. Rundsch, Berne, Switz, 1978 p. 67-71.

Murakami, Kazumi, Murakami, Yasunori, Study on the Moire Topography (a Method for discriminating between the Concave and Convex regions of an object): Bull JSME v. 21 no. 152 Feb. 1978 p. 196-202.

Murakami, Kazumi, Murakami, Yasunori, Study on the Moire Topography (an Accurate Theory and the Applicable Limit of the Divergent Light Ray Method: Bull JSME v. 21 no. 155 May 1978 p. 788-792.

Murakami, Kazumi, Murakami, Yasunori, Problems in the measurement of concave-convex object by the moire topographic method: Bull Jpn. Soc. Precis. Eng. v. 12 no. 3 Sep 1978 p. 145-150.

Ohtsubo, J., and Asakura, T., Measurement of Surface Roughness Properties using Polychromic Speckle: Optik (Stuttgart) v. 49 no. 4 Jan. 1978 p. 445-451.

Ohtsubo, J., Asakura, T., Measurement of Surface Roughness Properties using Speckle Patterns with Non-Gaussian Statistics: Opt.Commun v. 25 no. 3 Jun. 1978 p. 315-319.

Pandit, Sudhakar M., Rajurkar, Kamlakar P., Mathematical Model for Electro-Discharge Machined Surface Roughness: Manuf.Eng.Trans. 1978, North Am.Metalwork Res.Conf.Proc. 6th Univ of Fla. Gainesville, Apr. 16-19 1978, SME, Dearborn. MI, 1978 p. 339-345.

Patir, N., A Numerical Procedure for Random Generation of Rough Surfaces: Wear, 47, p. 263-277 (1978).

Phillips, M.R. and T.F.J. Quinn, The Effect of Surface Roughness and Lubricant Film Thickness on the Contact Fatigue Life of Steel Surfaces Lubricated with a Sulphur-Phosphorus Type of Extreme Pressure Additive: Wear, 51, p. 11-24 (1978).

Pollock, H.M., Contact adhesion between solids in vacuum,II. Deformation and interfacial energy: J. Phys. D, Appl. Phys., 11, p. 39-54 (1978).

Prakash, J., Christensen, H., Squeeze Films Between Two Rough Rectangular Plates: J.Mech.Eng.Sci. v. 20 no. 4 Aug. 1978 p. 183-188.

Raja, J., Radhakrishnan, V.J., Waviness separation in surface profiles using digital filters: Eng Prod (New Delhi) v. 2 no. 3 Sep 1978 p. 139-144.

Rowe, R.C., The effect of some formulation and process variables on the surface roughness of film-coated tablets: J. Pharm. Pharmac., 30, p. 669-672 (1978).

Rowe, R.C., The measurement of the adhesion of film coatings to tablet surfaces, the effect of tablet porosity, surface roughness and film thickness: J. Pharm. Pharmac., 30, p. 343-346 (1978).

Sakamoto, T. and T. Tsukizoe, Metal transfer in the frictional contact of a rough hard surface: Wear, 47, p. 301-313 (1978).

Sayles, R.S. and T.R. Thomas, Computer simulation of the contact of rough surfaces: Wear, 49, p. 273-296. (1978a).

Sayles, R.S. and Thomas, T.R., Surface topography as a nonstationary random process: Nature, 271, No.5644, p. 431-434 (February 1978b).

Sayles, R.S., and Thomas, T.R., Topography of random surfaces, reply: Nature, v. 273, no. 5663, p. 573, (1978c).

Sayles, R.S., Thomas, T.R., Three-dimensional roughness measurement with a stylus instrument: Microtecnic no. 2, p. 33-36, 1978d.

Shukla, J.B., A new theory of lubrication for rough surfaces: Wear, 49, p. 33-42.(1978).

Smolka, F.M., Caudell, T.P., Surface Profile Measurement and Angular Deflection Monitoring using a Scanning Laser Beam - A Non-Contact Method: Appl.Opt. v. 17 no. 20 Oct. 15 1978 p. 3284-3289.

Sun, D.C., On the effects of Two-Dimensional Reynolds Roughness in Hydrodynamic Lubrication: Proc. Roy. Soc. London Ser A v. 364 no. 1716 Dec. 12 1978 p. 89-106.

Teague, Clayton E., Uncertainties in calibrating a stylus type surface texture measuring instrument with an interferometrically measured step: Metrologia v. 14 no. 1 1978 p. 39-44.

Thomas, T.R., Some Examples of the Versatility of Stylus Instruments: Mec.Mater Electr. no. 337 Jan. 1978 p. 17-25.

Thomas, T.R., Surface Roughness Measurement, Alternatives to the Stylus: Int Metrol.Conf, NELEX '78. East Kilbridge, Glasgow, Scotl. Nov. 28-30 1978. Issued by Natl.Eng.Lab. East Kilbridge, Glasgow, Scotl. 1978 Pap 4.2, 23p.

Thomas, T.R., The characterisation of changes in surface topography during running-in: Proc. 4th Leeds-Lyon Symp., p. 99-108 (MEP, London, 1978).

Thomas, T.R. and Sayles, R.S., Some problems in the tribology of rough surfaces: Trib. Int., p. 163-168 (June 1978).

Thomas, T.R. and Sayles, R.S., Some applications of statistical surface measurements to engineering problems: Mecanique Materiaux Electricité No.337, p. 7-16 (January 1978).

Thwaite, E.G., The numerical interpretation of topography: Wear, 51, p. 253-267.(1978).

Verkerk, J., Orelio, J.M.B., Willemse, H.R, Ratio of axial to lateral stiffness, a quality parameter for stylus surface profile tracing instruments: Int J Mach Tool Des Res v. 18 no. 3 1978 p. 107-116.

Ward, C.M., Hendricks, C.D., Weinstein, B.W., Technique for full surface examination of small spheres in the Scanning Electron Microscope: Scanning Electron Microsc. Meet at Los Angeles. Calif. Apr. 17-21 1978. Scanning Electron Microsc. AMF O'Hara. Ill.1978 v. 1 p. 783-787.

Wedeven, L.D., Cusano, C., Elastohydrodynamic Film Thickness Measurements of Artificially Produced Surface Dents and Grooves: ASLE Prepr. for ASME/ASLE Lubr.Conf. Minneapolis. Minn. Oct. 24-26 1978. ASLE, Park Ridge, Ill. 1978 Pap. 78-IC-IA-1. 12 p.

Weissbach, G., A new method for the determination of the roughness of rock joints in the laboratory: Int. J. Rock Mech. Min. Sci. & Geomech. Abstr., 15, p. 131-133 (1978).

Whitehouse, D.J., Beta Functions for surface typologie?: Annals of CIRP, 27, p. 491-497 (1978).

Whitehouse, D.J., Surfaces - a link between manufacture and function: Proc. Inst. Mech., Engrs., 192, 19, p. 179-188 (1978).

Whitehouse, D.J., The digital measurement of peak parameters on surface profiles: J. Mech. Eng. Sci., 20, 4, p. 221-227 (1978).

Whitehouse, D.J. and Phillips, M.J., Discrete properties of random surfaces: Phil. Trans. R. Soc. Lond., 290, 1369, p. 267-298 (November 1978).

Wright, Roger N., Characterizing Microsurface quality: Met.Prog. v. 114 no. 3 Aug. 1978 p. 49-51, 54-55.

Wykes, C., Jones, R., Butters, J.N., New technique for surface shape investigation: Ann CIRP v. 27 no. 1 1978, Gen Assem of CIRP, 28th, Manuf Technol, Eindhoven, Neth, Aug 28-Sep 2 1978. Tech Rundsch, Berne, Switz, 1978 p. 361-364.

Yamada, K., N. Takeda, J. Kagami and T. Naoi, Mechanisms of Elastic Contact and Friction Between Rough Surfaces: Wear, 48, p. 15-34 (1978).

Yamada, K., N. Takeda, J. Kagami and T. Naoi, Surface Density of Asperities and Real Distribution of Asperity Heights on Rubbed Surfaces: Wear, 47, p. 5-20 (1978).

## 1979

Agarwal, R.A., Patki, G.S., Basu, S.K., Analysis of surface profiles for stationarity and ergodicity: Precis. Eng. v. 1 no. 3 Jan 1979 p. 159-165.

Barwell, F.T., Bearings systems principles and practice: Oxford University press, UK 1979.

Berry, M.V., "Diffractals": J. Phys., A12, p. 781-797, 1979.

Bhushan, B., Effect of surface roughness and temperature on the wear of CdO-Graphite and MoS2 films: Wear of Mater, Int Conf on Wear of Materials, Dearborn, Mich, Apr 16-18 1979, ASME, New York, 1979 p. 409-414.

Bush, A.W. and Gibson, R.D., A theroetical investigation of thermal contact conductance: Applied Energy, 5, p. 11-22 (1979).

Buttery, T.C., M.S. Hamed, A study of geometric and true levelling in electroplating using stylus methods: Wear, 57, p. 207-215 (1979).

Carter, G., M.J. Nobes and K.I. Arshak, The application of erosion slowness theory to prediction of surface contour generation during particulate ablation of solids: Wear, 53, p. 245-261 (1979).

Challen, J.M. and P.L.B. Oxley, An explanation of the different regimes of friction and wear using asperity deformation models: Wear, 53, p. 229-243 (1979).

Chandley, P.J., Determination of the probability density function of height on a rough surface from far-field coherent light scattering: Opt Quantum Electron v. 11 no. 5 Sep 1979 p. 413-418.

Chandley, P.J., Determination of the standard deviation of height on a rough surface using interference microscopy: Opt Quantum Electron v. 11 no. 5 Sep 1979 p. 407-412.

Chapman, R.J. and A.A. Rizkallah-Ellis, Effect of the surface finish of brake rotors on the performance of brakes: Wear, 57, p. 345-356 (1979).

Chermant, J.L. and Coster, M., Review.Quantitative fractography: J. Mat. Sci. 14, p. 509-534 (1979).

Chetwynd, D.G., The digitization of surface profiles: Wear, 57, p. 137-145 (1979).

Chivers, T.C. and S.J. Radcliffe, The role of surface profilometry in failure diagnosis: Wear, 57, p. 313-321 (1979).

Church, E.L., The measurement of surface texture and topography by differential light scattering: Wear, 57, p. 93-105 (1979).

Church, E.L., The role of surface topography in x-ray scattering: Proc. SPIE 184, 196 (1979).

Clarke, G.M. T.R. Thomas, Roughness measurement with a laser scanning analyser: Wear, 57, p. 107-116 (1979).

Coy, J.J., and Steven M. Sidik, Two-dimensional random surface model for asperity contact in elastohydrodynamic lubrication: Wear, 57, p. 293-311 (1979).

Damir, M.N.H., Approximate harmonic models for roundness profiles: Wear, 57, pp. 217-225 (1979).

Darbey, P.L., Higginson, G.R., Townend, D.J., Lubrication of rough compliant solids: Elastohydrodyn and Relat Top, Proc of the Leeds-Lyon Symp on Tribol, 5th, Univ of Leeds, Engl, Sep 19-22 1978, Mech Eng Publ Ltd, London, Engl for Univ of Leeds, Inst of Tribol, Engl and INSA, Fr, 1979 p. 398-403.

Davis, F.A., Replica techniques in the study of crankshaft journal topography: IMechE. Aut. Eng. (April/May 1979).

de Korte, P.A.J., Laine, R., Assessment of surface roughness by x-ray scattering and differential interference contrast microscopy: Applied Optics, v. 18 no. 2 Jan 15 1979 p. 236-242.

Derner, W.J., Use of the scanning electron microscope in analysing rolling contact surfaces: SAE Prepr no. 790851 for Meet Sep 10-13 1979 10 p.

Elrod, H.G., General theory for laminar lubrication with Reynolds roughness: J. Lubr Technol Trans ASME v. 101 no. 1 Jan 1979 p. 8-14.

Elson, J.M., Bennett, J.M., Relation between the angular dependence of scattering and the statistical properties of optical surfaces: J Opt Soc Am v. 69 no. 1 Jan 1979 p. 31-47.

Fritt, Thomas, N., Surface finishing and surface condition prior to coating: SME Tech Pap Ser MR no. 79-750 1979 12 p.

George, A.F., A comparative study of surface replicas: Wear, 57, p. 51-61 (1979).

Georges, J.M., Montes, H., Martin, J.M., Applications de l'analyse de surface aux problemes de lubrification. (Application of Surface Analysis to Lubrication Problems): Vide v. 34 no. 197 June-Aug. 1979 p. 163-197.

Giglio, M., Musazzi, S.; Perini, U., Surface roughness measurements by means of speckle wavelength decorrelation: Opt Commun v. 28 no. 2 Feb 1979 p. 166-170.

Gledhill, R.H., Jackson, A., Cameron, A., Interferometric study of the EHL of elliptical contacts aligned in the direction of rolling: Elastohydrodyn and Relet Top, Proc of the Leeds-Lyon Symp on Tribol, 5th Univ of Leeds, UK, Sep 19-22 1978. Mech Eng Publ Ltd, London, Inst of Tribol Engl and INSA, Fr, 1979 p. 116-120.

Hamouda, A.M., Precise pneumatic co-axial jet gauging system for surface roughness measurements: Precis. Eng. v. 1 no. 2 Apr 1979 p. 95-100.

Ishigaki, H. and I. Kawaguchi, Analysis of the initial contact height when a curved body approaches a rough flat surface: Wear, 54, p. 273-289 (1979)-.

Ito, Norio, Kato, Tadashi, Representation of surface irregularity using waveform model: Bull Jpn. Soc. Precis. Eng. v. 13 no. 4 Dec 1979 p. 213-214.

Kato, S., Marui, E., Kobayashi, A., Natsubayashi, T., Characteristics of surface topography and static friction on scraped surface slideway - 2: ASME Paper no. 79-WA/PROD-7 for Meet Dec 2-7 1979 5 p.

Kochlewski, Krzysztof, Digital measurement of surface topography: Przegl. Mech. v. 38 no. 24 Dec 1979 p. 16-17.

Konczakowska, Alicja, Konczakowski, Andrzej, Evaluation of the accuracy of surface roughness measurement: Przegl. Mech. v. 38 no. 18 Sep 1979 p. 6-8.

Kumar, S. and S.V. Sachidananda, Effects of viscosity variation and surface roughness in short journal bearings: Wear, 52, p. 341-346 (1979).

Kuznetsov, Ye. A. and G.A. Gorokhovsky, Effect of roughness and Poisson's ratio on deformation conditions in the surface layers of contacting bodies: Wear, 53, p. 43-51 (1979).

Lebiedzik, J., Edwards, R., Phillips, B., Use of microtopography capability in the SEM for analyzing fracture surfaces: Scanning Electron Microsc 1979, pt 2, Paper at Meeting. Washington, DC, Apr 16-20 1979. Scanning Electron Microscopy, AMF O'Hare, Ill, 1979 p. 61-66.

Ledger, Anthony M., Surface Roughness Measurement of Aspheric Surfaces: SPIE Semin Proc. v. 184 Space Opt. Imaging X-Ray Opt. Workshop. Huntsville. Ala. May 22-24 1979. SPIE. Bellingham. Walsh, 1979 p. 176-180.

Lichte, H., Moellenstedt, G. J., Measurement of the roughness of supersmooth surfaces using an electron mirror interference microscope: Phys E Sci Instrum v. 12 no. Oct 1979 p. 941-944.

Lichten, Larry, Partial solution to fitting large parametric surfaces in computer-aided design systems: Des Autom.Conf. 16th Annu.Proc.San Diego, Calif. Jun. 25-27 1979 Publ. by IEEE (Cat. no. 79 CH1427-4). New York, 1979 p. 222-228.

Loukjanov, I.V., Evaluation of the autocorrelation functions used when investigating surface roughness: J Mech Eng Sci v. 21 no. 2 Apr 1979 p. 105-113.

Lukyanov, V., and Rudzitis, J., Parametri Sherohovatosti Poverhnosti (in Russian; Surface Roughness Parameters): Moscow, "Standart" publ., 162 p. , 1979.

Lush, P.A., Surface deformation produced by a cavitating flow: Proc of the Int Conf on Erosion by Liquid and Solid Impact, 5th Newhem Coll. Cambridge, Sep 3-6 1979, Univ Cambridge Cavendish Lab, UK, 1979 p. 61.1-61.6.

Mallory, A.W., Centrifugal blasting for surface preparation: SME Tech Pap Ser MR no. 79-764 1979 19 p.

Manning, P.T., The influence of surface roughness on gas flow through cracks: Wear, 57, p. 365-376 (1979).

Manning, P.T., The relationship between roughness, slope and power spectrum for some engineering surfaces: Central Electricity Generating Board, RD/B/N4620 (July 1979).

Marek Lech, Irena Mruk and Jacek Stupnicki, Holographic contouring of the surface topography and study of the contact rigidity of rough surfaces: Wear, 57, p. 263-268 (1979).

Miroyuki Ishigaki and Itaru Kawaguchi, A simple estimation of the elastic-plastic deformation of contacting asperities: Wear, 54, p. 157-164 (1979).

Misra, A., Finnie, Iain, Classification of three-body abrasive wear and design of a new tester: Wear of Mater, Presented at the Int Conf on Wear of Mater, Dearborn, Mich, Apr 16-18 1979 Publ by ASME, New York, DY, 1979 p. 313-318.

Murari, G., Vullo, V., Stroppiana, B., Experimental analysis of micro and macrogeometrical errors on manufactured surfaces: Tec Ital v. 44 no. 6 Nov-Dec 1979 p. 340-355.

Murthy, T.S.R., B. Raghunatha Rao and S.Z. Abdin, Evaluation of spherical surfaces: Wear, 57, p. 167-184 (1979).

Narayanasamy, K., V. Radhakrishnan and R.G. Narayanamurthi, Analysis of surface reproduction characteristics of different replica materials: Wear, 57, p. 63-69 (1979).

Neal, W.E.J., Optical examination and monitoring of surfaces: Appl.Surf.Sci. v. 2 no. 4 May 1979 p. 445-501.

Neal, W.E.J., Applications of ellipsometry for monitoring surface contamination and degree of surface cleanliness: Surf Contam, Genesis, Detect, and Control, v. 2, Proc of Symp held at Int Symp on Contam Control, 4th Washington, DC, Plenum Press, New York, 1979 p. 749-767.

Neema, M.L., Pandey, P.C., Some investigations into the performance characteristics of cold worked machined surfaces: Wear of Mater, Presented at the Int Conf on Wear of Mater, Dearborn, MI, Apr 16-18 1979 ASME, New York, 1979, p. 229-242.

Nuri, K.A., The contact behaviour of surfaces of small nominal area: Wear, 57, p. 255-262 (1979).

Osanna, P. Herbert, Surface roughness and size tolerance: Wear, 57, p. 227-236 (1979).

Patir, Madir, Cheng, H.S., Application of average flow model to lubrication between rough sliding surfaces: J Lubr Technol Trans ASME v. 101 no. 2 Apr 1979 p. 220-230.

Pernick, B.J., Surface roughness measurements with an optical fourier spectrum analyzer: Applied Optics, v. 18 no. 6 Mar 15 1979 p. 796-801.

Peters, J., Vanherck, P., Sastrodinoto, M., Assessment of surface typology analysis techniques: Ann CIRP v. 28 no. 2 1979 p. 539-554.

Piwonka, Fridolin, Gast, Theodor, On-line measuring of the roughness of periodically shred surfaces using the reflection index: Tech. Mess TM v. 46 no. 9 Sep. 1979 p. 339-347.

Prakash, J., Tonder, K., Christensen, H., Micropolarity - Roughness interaction in hydrodynamic lubrication: ASME Pap no. 79-Lub-8 for Meet Oct 16-18 1979 5 p.

Prujanski, L.Y., A study of surface wearing ability in relation to some technological factors.II.Effect of the method of surface finishing and running-in: Wear, 54, p. 355-369 (1979).

Prujanski, Y., A study of surface wearing ability in relation to some technological factors.1. Test method and the effect of the direction of surface finishing: Wear, 54, p. 343-354 (1979).

Raja, J. and V. Radhakrishnan, Digital filtering of surface profiles: Wear, 57, p. 147-155 (1979).

Raja, J., Radhakrishnan, V., Filtering of surface profiles using fast Fourier transform: Int J Mach Tool Des Res v. 19 no. 3 1979 p. 133-141.

Reason, R.E., Progress in the appraisal of surface topography during the first half-century of instrument development: Wear, 57, p. 1-16 (1979).

Roy, S.K., Chowdhury, H. Kaliszer and G.W. Rowe, An analysis of changes in surface topography during running-in of plain bearings: Wear, 57, p. 331-343 (1979).

Rudolph, R. Hegmon, Definition and measurement of pavement surface roughness: Wear, 57, p. 127-136 (1979).

Salje, E., Roughness measuring device for controlling grinding processes: Ann CIRP v. 28 no. 1 1979, Manuf. Technol.Gen.Assem. of the CIRP, 29th, Davos, Switz. Aug. 26-Sept. 1 1979. Tech. Rundsch, Berne, Switz. 1979 p. 189-191.

Sathiamoorthy, P., V. Radhakrishnan and J.F. Rehman, A stochastic analysis of grinding wheel and workpiece surfaces: Wear, 54, p. 303-313 (1979).

Sayles, R.S., Thomas, T.R., Measurements of the statistical microgeometry of engineering surfaces: J Lubr Technol Trans ASME v. 101 no. 4 Oct 1979 p. 409-417.

Sayles, R.S., Thomas, T.R., Anderson, J., Haslock, I. and Unsworth, A., Measurement of the surface microgeometry of articular cartilage: J. Biomechanics, 12, p. 257-267 (1979).

Schneider, E.J., Recent American and International developments in the assessment of surface quality and their effect on the future: Wear, 57, p. 17-32 (1979).

Scott, W. and R.M. Baul, Analysis of the active profile of grinding wheel surfaces: Wear, 57, p. 247-254 (1979).

Scott, W. and R.M. Baul, Preliminary evaluation of a proximity transducer for the measurement of surface texture: Wear, 57, p. 33-38 (1979).

Shukla, J.B. and S. Kumar, Effects of Viscosity Variation and Surface Roughness in the Lubrication of a Slider Bearing: Wear, 52, p. 235-242 (1979).

Smith, E.H. and W.M. Walmsley, Walsh functions and their use in the assessment of surface texture: Wear, 57, p. 157-166 (1979).

Spera, D.A., Richards, T.R., Modified power law equations for vertical wind profiles: Pac.Northwest Lab.Tech.Rep.PNL 3214, Conf. and Workshop in Wind Energy Charact. and Wind Energy Siting. Portland, OR. Jun. 19-21 1979, Proc., Pac. Northwest Lab. Richland, WA, 1979 p. 47-58.

Stansberg, C.T., Surface roughness measurements by means of polychromatic speckle patterns: Applied Optics, v. 18 no. 23 Dec 1 1979 p. 4051-4060.

Staufert, G., Description of Roughness Profiles by separating the Random and Periodic Components: Wear, 57, pp185-194 (1979).

Stedman, M. and Stanley, V.W., Machine for the rapid and accurate measurement of profile: Adv. Opt. Prod. Tech., SPIE, 163, p. 99-102 (April 1979).

Taganov, O.K., Taganova, V.A., Investigation of the influence of the microstructure on the scattering properties of a complex rough surface: J.Appl.Spectrose v. 31 no. 3 Sep.1979 p. 1171-1174.

Tanner, L.H., Pneumatic wheatstone bridge for surface roughness measurement: J Phys E Sci Instrum v. 12 no. 10 Oct 1979 p. 957-960.

Tanner, L.H., A comparison between Talysurf 10 and optical measurements of roughness and surface slope: Wear, 57, p. 81-91 (1979).

Teale, J.L., Lebeck, A.O., Evaluation of the average flow model (1) for surface roughness effects in lubrication: ASME Pap no. 79-lub-37 for Meet Oct 16-18 1979 7 p.

Thomas, T.R., Calculation of elastic contact stresses for rough-curved surfaces: ASLE Trans., 22, 2, p. 184-189 (1979).

Thomas, T.R., Walker, M., Roughness measurement with a microcomputer: Eng. Software.Proc.of the Int.Conf. 1st Southampton Univ. Engl. Sep. 1979. Pentech Press, London, UK, 1979 p. 663-672.

Thwaite, E.G., The Direct Measurement of the Power Spectrum of Rough Surfaces by Optical Fourier Transformation: Wear, 57, p. , 71-80 (1979).

Tse, R., and Cruden, D.M., Estimating joint roughness coefficients: International Journal of Rock Mechanics and Mining Science, v. 16, p. 303-307, (1979).

Tuffentsammer, K., Engel, H.J., Effect of Surface Roughness on Friction in Piston-Cylinder Systems: Ann CIRP v. 28 no. 1 1979, Manuf. Technol, Gen Assem of the CIRP, 29th Davos, Switz, Aug 26-Sept 1 1979. Tech Rundsch, Berne, Switz, 1979 p. 413-418.

Turley, D.M. and E.D. Doyle, Effect of Matenal Aspects on the production of machined and ground surfaces: Wear, 57, p. 237-246 (1979).

Uchida, Shin-nosuke, Sato, Hisayoshi, O-hori, Masanori, Two dimensional measurement of surface roughness by the light sectioning method: Ann CIRP v. 28 no. 1 1979, Manuf Technol, Gen Assem of the CIRP, 29th Davos, Switz, Aug 26-Sept 1 1979, Tech Rundsch, Berne, 1979 p. 419-423.

Vorburger, T.V., E.C. Teague, F.E. Scire & F.W. Rosberry, Measurements of stylus radii: Wear, 57, p. , 39-49 (1979).

Wambold, J.C., The measurement and data analysis used to evaluate highway roughness: Wear, 57, p. 117-125 (1979).

Watanabe, K., Nakamura, K., Maeda, S., Hirohata, Y., Mohri, M., Yamashina, T., Changes in the roughness factor of 304 stainless steel, pyrolytic carbon and silicon carbide surfaces with energetic ion irradiation: J. Nucl Mater v. 85 & 86 Part B Dec 1979, Fusion React Mater, Proc of 1st Top Meet. Miami Beach, Fla. Jan 29-31 1979 p. 1081-1084.

Watson, W., T.G. King, T.A. Spedding and K.J. Stout, The machined surface - time series modelling: Wear, 57, p. 195-205 (1979).

Whitehouse, D.J., M.S. Hamed, Tribology parameter prediction: Wear, 57, p. 323-329 (1979).

Williams, A. and N. Idrus, Detection and measurement of damage to surfaces after static contact loading: Wear, 57, p. 281-291 (1979).

Witton, John J., Edmonds, M.J., Surface analysis - A new tool in erosion research?: Proc of the Int Conf on Erosion by Liq and Solid Impact, 5th Newhem Coll, Cambridge, Engl. Sep 3-6 1979, Univ of Cambridge, Cavendish Lab. UK, 1979 p. 35.1-35.5.

Woo, K.L. and T.R. Thomas, Roughness, friction and wear, The effect of contact planform: Wear, 57, p. 357-363 (1979).

Yamamoto, Yuji, Hirano, Fujio, Hashimoto, Masaaki, Effect of surface roughness on scoring - 2. Under flooded lubricating conditions: Bull JSME v. 22 no. 163 Jan 1979 p. 93-97.

## 1980

Agarwal, R.A., G.S. Patki and S.K. Basu, Deformation of surface irregularities under static loads: Wear, 58, p. 109-115 (1980).

Berry, M.V., and Lewis, Z.V., On the Weierstrass-Mandelbrot fractal function: Proceedings of the Royal Society of London, Series A, no. 370, p. 459-484, (1980).

Berthe, D., Flamand, L., Foucher, D., Godet, M., Micropitting in Hertzian contacts: Surf Houghness Eff in Hydrodyn and Mixed Lubr, Presented at ASME Winter Annu Meet, Chicago, Ill, Nov 16-21 1980, ASME, New York, 1980 p. 145-172.

Bodschwinna, Horst, Influences of the stylus tip geometry on Industrial Roughness Measuring: Tech Mess TM v. 47 no. 1 Jan 1980 p. 21-28.

Bodschwinna, Horst, Hense, Ulrich, Difficulties in Measuring the Abbott-curve: Tech Mess TM v. 47 no. 10 Oct 1980 p. 361-368.

Burrow, Guenter, Surface roughness measurement: Werkstatt Betr v. 113 no. 5 May 1980 p. 339-343.

Bush, A.W., Gibson, R.D., Effect of surface roughness and elastic deformation in hydrodynamic lubrication - A perturbation approach: Surf Roughness Eff in Hydrodyn and Mixed Lubr, ASME Winter Annu Meet, Chicago, Ill, Nov 16-21 1980 ASME, New York, 1980 p. 173-191.

Casarella, M.J., Niedzwecki, J.M., Predicting of the effects of surface roughness on laminar-turbulent transition for axisymmetric bodies: J Hydronaut v. 14 no. 3 Jul 1980 p. 83-90.

Childs, T.H.C., The contact and friction between flat belts and pulleys: Int. J. Mech. Sci., 22, p. 117-126 (1980).

Church, E.L., Interpretation of high-resolution x-ray scattering measurements: Proc. SPIE 257, 254 (1980).

Church, E.L., The role of spatial bandwidth limits in the measurement and interpretation of second-order statistical properties: Proc. 26th Conf. on the Design of Experiments in Army Research, Development & Testing. (October 1980).

Corey, Harry, S., Laser surface finish gauge: Proc Soc Photo Opt Instrum Eng v. 247, Adv in laser Eng and Appl, San Diego, CA, Jul 31-Aug 1 1980. SPIE, Bellingham, WA, 1980 p. 173-179.

Croce, P., Prod'Homme, L., Contribution of immersion technique to light scattering analysis of very rough surfaces: J Opt v. 11 no. 5 Sep-Oct 1980 p. 319-327.

Croce, P., Prod'homme, L., Analysis of polished surfaces by the spatial distribution of scattered light: Opt Commun v. 35 no. 1 Oct 1980 p. 20-24.

Dagnall, H., Exploring surface texture: Rank Taylor Hobson, Leicester (1980).

Debler, E., Zander, K., Measurement of smoothness on optical plane surfaces with an autocollimating telescope and a pentagonal prism: PTB Mitt v. 90 no. 5 Oct 1980 p. 339-349.

Edmonds, M.J., Snaith, B., Probert, S.D., Practical means of quantitatively describing the topographies of machined surfaces: Trans Inst Mess Control v. 2 no. 3 Jul-Sept 1980 p. 157-163.

Fukuhara, Hiroaki, Kimura, Katsuyoshi, Effects of thickness of couplant layer and surface roughness of test object on sensitivity in ultra-sonic angle-beam technique: Trans Natl Res Int Met (Tokyo) v. 22 no. 4 Dec 1980 p. 219-226.

Gillibrand, Derek, Inherent roughness of a machined surface: SME Tech Pap Ser MF 80-905 1980 9 p.

Hillebrecht, F.U., Determination of surface roughness from scattered light measurements: J Phys D Appl Phys v. 13 no. 9 Sep 14 1980 p. 1625-1631.

Huffington, J.D., The topography of abraded surfaces in relation to contact area and mechanism of abrasion: Wear, 58, p. 117-136 (1980).

Hunter, A.G.M. and E.A. Smith, Measurement of surface roughness: Wear, 59, p. 383-386 (1980).

Inukai, Yukio, Saito, Sachiko, Mishima, Ikuo, Vector model analysis of individual differences in sensory measurement of surface roughness: Hum Factors v. 22 no. 1 Feb 1980 p. 25-36.

Izmailov, V.V. and M.S. Kourova, Correlation between surface topography and profile statistical parameters: Wear, 59, p. 409-421 (1980).

Jain, V.K. and S. Bahadur, Development of a wear equation for polymer-metal sliding in terms of the fatigue and topography of the sliding surfaces: Wear, 60, p. 237-248 (1980).

Kaneta, M., Cameron, A., Effects of asperities in elastohydrodynamic lubrication: J Lubr Technol Trans ASME v. 102 no. 3 Jul 1980 p. 374-379.

Koura, M.M., The effect of surface texture on friction mechanisms: Wear, 63, p. 1-12 (1980).

Kumar, S., Stochastic models with variable viscosity for hydrodynamic lubrication of rough surfaces: Wear, 62, p. 329-336 (1980).

Loukyanov, V.S., Quality control of the roughness of engineering surfaces: Natl Conf Publ Inst Eng Aust no. 80/5, Prepr of Pap - Int Conf on Manuf Eng. Melbourne, Aust, Aug 25-27 1980. Inst of Eng, Aust, Barton, ACT, 1980 p. 367-372.

Loukyanov, V.S., Local irregularities of the surface and their influence on surface roughness parameters: Ann CIRP v. 29 no. 1 1980 p. 423-428.

Makh, S.S., Smith, R., Walls, J.M., Development of surface shape during sputter-depth profiling in auger electron spectroscopy: Surf Interface Anal v. 2 no. 3 Jun 1980 p. 115-119.

Miki, H. and S. Kobayashi, An equation for the centre-line average roughness of material slid against abrasive paper: Wear, 65, p. 47-53 (1980).

Murakami, Kazumi, Murakami, Yasunon, Tenaka, Kunihide, and Saihara, Atsushi, Approximate theory for the sharpening of fringe widths in the grid illuminating method: Bull Jpn. Soc. Precis. Eng. v. 14 no. 4 Dec 1980 p. 229-235.

Murthy, T.S.R., Abdin, S.Z., Minimum zone evaluation of surfaces: Int J Mach Tool Des Res v. 20 no. 2 1980 p. 123-136.

Musker, A.J., Universal Roughness Functions for Naturally-occurring surfaces: Trans.Can.Soc.Mech.Eng. v. 6 no. 1 1980-1981 p. 1-6.

Neema, M.L. and P.C. Pandey, Investigation of the performance characteristics of cold-worked machined surfaces: Wear, 60, p. 157-166 (1980).

Nemiekar, P.R., Cheng, H.S., Traction in rough elastohydrodynamic contacts: Surf Roughness Eff in Hydrodyn and Mixed Lubr, Presented at ASME Winter Annu Meet, Chicago, Ill, Nov 16-21 1980 ASME, New York, 1980 p. 173-191.

Nuri, K.A., Some factors influencing the contact behaviour of surfaces: J Lubr Technol Trans ASMF v. 102 no. 1 Jan 1980 p. 15-17.

Radhakrishnan, V., Surface profile analysis by changing the stylus radius: Indian J Technol v. 18 no. 4 Apr 1980 p. 173-178.

Rohde, S.M., and Cheng, H.S. (eds.)., Surface roughness effects in hydrodynamic and mixed lubrication: Winter annual meeting, American Society of Mechanical Engineers, Chicago, Ill, Nov 16-21 1980, Proc., ASME, New York, 1980 211 p.

Semenyuk, N.F. and Sirenko G.A., Description of anisotropic rough friction surface topography using a random field model (Real contact area, friction coefficient, thermal resistance, adhesive interaction with account for deformation in the contact zone): Trenie i Iznos, 1, 6, p. 1010-1020 (1980).

Shafia, M.A. and T.S. Eyre, The effect of surface topography on the wear of steel: Wear, 61, p. 87-100 (1980).

Shiraishi, M., In-process measurement of surface roughness in turning by laser beams: ASME Pap no. 80-WA/PROD-17 for Meet Nov 16-21 1980 7 p.

Shunmugam, M.S., Gondhalekar, D.Y., Surface finish measurement using microwaves: Precis. Eng. v. 2 no. 1 Jan 1980 p. 39-31.

Spedding, T.A., King, T.G., Watson, W., Stout, K.J., Pearson system of distributions - its application to non-gaussian surface metrology and a simple wear model: J Lubr Technol Trans ASME v. 102 no. 4 Oct 1980 p. 495-500.

Stevenson, Dennis R., Computer-assisted N/C programming of parts contours: SME Tech Pap Ser MS 80-904 1980 12 p.

Tanner, L.H., An improved pneumatic Wheatstone bridge for roughness measurement: J. Phys. E, Sci. Instrum., 12, 957, p. 593-594 (1980).

Thomas, T.R., Sayles, R.S. and Haslock, I., Human joint performance and the roughness of articular cartilage: Trans. Am. Soc. Mech. Engrs, J. Biomech. Eng., 102G, 1, p. 50-57 (1980).

Thwaite, E.G., Power spectra of rough surfaces obtained by optical Fourier transformation: Ann CIRP v. 29 no. 1 1980 p. 419-422.

Thwaite, E.G., Bendeli, A., Non-contact profile recording instrument: Natl Conf Publ Inst Eng Aust no. 80/5, Prepr of Pap - Int Conf on Manuf Eng, Melbourne, Aust, Aug 25-27 1980. Inst of Eng, Aust, Barton, ACT, 1980 p. 393-396.

Tonder, K., General Reynolds-type equation for rough surfaces, based on numerical simulation: Surf Roughness Eff in Hydrodyn and Mixed Lubr, Presented at ASME Winter Annu Meet, Chicago, Ill, Nov 16-21 1980 ASME, New York, 1980 p. 193-211.

Tonder, K., Numerical investigation of the lubrication of doubly periodic unit roughness: Wear, 64, p. 1-14 (1980).

Tonder, Kristian, Simulation of the lubricant of isotropically rough surfaces: ASLE Trans v. 23 no. 3 Jul 1980 p. 326-333.

Vajpayee, S., The accuracy of turned surfaces: Wear, 59, p. 387-396 (1980).

Vorburger, T.V., Ludeme, K.C., Ellipsometry of rough surfaces: Applied Optics, v. 19 no. 4 Feb 15 1980 p. 561-573.

Walls, J.M., Sykes, D.E., Hall, D.D., Factors affecting the integrity of sputter-depth profiles in surface analysis: Proc of the Int Vac Congr, (Trienn Meet of the Int Union for Vac Sci, Tech and Appl), 8th, v. 1, Cannes, Fr, Sep 22-26 1980, Soc Fr du Vide, (Suppl Vide, les Couches Minces no. 201), Paris, Fr, 1980 p. 287-290.

Wilson, W.R.D., Silletto, J.G., Surface roughening in liquid lubricated upsetting: Metalwork Lubr, Presented at the Int Symp, Century 2 - Emerging Technol Conf, San Francisco, Calif, Aug 18-19 1980 ASME, New York, p. 87-94.

Woo, K.L. and T.R. Thomas, Contact of rough surfaces, A review of experimental work: Wear, 58, p. 331-340 (1980).

Young, Russell D., Vorburger, Theodore, V., Teague, E. Clayton, In-process and on-line measurement of surface finish: Ann CIRP v. 29 no. 1 1980 p. 435-440.

# 1981

Adewoye, T.F. Page, Electron Microscopy study of surface and subsurface friction damage in single-crystal SiC: Wear, 73, p. 247-260 (1981).

Allen, D.M., Anisotropic etching microtechnology: Precis.Eng. v. 3 no. 3 July 1981. p. l61-166.

Bahlmann, Werner, Shot blasting-A manufacturing method of surface finishing technology: Blech Rohre Profile v. 28 no. 11 Nov 1981 p. 528-534.

Baker, Alan, Friction surfaces: Engineering (London) v. 221 no. 3 Mar 1981 p. I-IV.

Bohidar, H. Chopra, Surface Studies of Absorbing Thin Solid Films: S. Opt.Commun. v. 38 no. 1 Jul.1981 p. 52-56.

Chetty, O.V., Krishnaish, Murthy, R.V.G.K., Radhakrishnan, V., On some aspects of Surface Formation in ECM: J.Eng.Ind.Trans.ASME v. 103 no. 3 Aug. 1981 p. 341-343.

Chowdhury, S.K. Roy and H.M. Pollock, Adhesion between metal surfaces,The effect of surface roughness: Wear, 66, p. 307-321 (1981).

Clarke, J. and A.D. Sarkar, Topographical features observed in a scanning electron microscopy study of aluminium alloy surfaces in sliding wear: Wear, 69, p. 1-23 (1981).

Cusano, C., Wedeven, L.D., Elastohydrodynamic film thickness measurements of artificially produced nonsmooth surfaces: ASIE Trans. v. 24 no. 1 Jan. 1981 p. 1-14.

Cusano, C., Wedeven, L.D., Effects of artificially-produced defects on the film thickness distribution in sliding EHD point contacts: ASME Pap. 81-Lub-46 for Meet Oct.4-7 1981 11 p.

Elia, Gerard G., Surface roughness effects on heat transfer in couette flow: Wear, 72, p. 335-352 (1981).

Fahl, Christoph, Centre line filters for separating roughness from ripple and shape in surface measurement: Werkstatt Betr v. 114 no. 2 Feb 1981 p. 109-111.

Fazlur, J. Rahman and V. Radhakrishnan, Surface condition monitoring of grinding wheels by pneumatic back-pressure measurement: Wear, 70, p. 219-226(198l).

Gorlenko, 0.A., Assessment of surface roughness parameters and their interdependence: Precis. Eng. v. 3 no. 2 Apr 1981 p. 105-108.

Graham, D., Chong, Y.C., Potential use of image analysis techniques in surface texture studies: Precis.Eng. v. 3 no. 4 Oct.1981 p. 209-213.

Hamrock, Bernard J., and Duncan Dowson, Ball bearing lubrication: John Wiley and Sons, anada 1981.

Hebboul, S.E., Hoffman, R.W., Jansen, F., Surface flattening kinetics by optical scattering technique: Appl Surf Sci v. 9 no. 1-4 Sep-Dec 1981, Symp on Appl Surf Anal, 3rd Dayton, OH, Jun 3-5 1981 p. 74-82.

Homauer, D.L., Raether, H., Determination of roughness of LiF films using guided light modes: Opt.Commun. v. 40 no. 2 Dec. 15 1981 p. 105-110.

Hughes, W.F., A cell theory of rough surface lubrication: Wear, 67, p. 31-53 (1981).

Idrus, N., An integrated digital system for three-dimensional surface scanning: Precis Eng. V3 nl Jan. 1981. pp37-43.

Ishigaki, H. and I. Kawaguchi, Effect of a skid on the accuracy of measuring surface roughness: Wear, 68, p. 203-211 (1981).

Ishigaki, H. and I. Kawaguchi, A conversion method from the E system to the M system in measuring surface roughness: Wear, 70, p. 295-301 (1981).

Jaisingh, Gopal K., Chiang, F.P., Contouring by Laser Speckle: Applied Optics, . v. 20 no. 19 Oct. 1 1981 p. 3385-3387.

Kato, S., Yamaguchi, K., Kato, T., Method to measure contact pressure between metallic surfaces by changes in surface roughness: J.Eng.Ind.Trans.ASME v. 103 no. 2 May 1981. p. 210-217.

Kayaba, Takao, Kato, Kohiji, Ikutomi, Hirobumi, Obinata, Toshiharu, Experimental investigations of the deformation of asperities on the contact interface: Technol Rep Tohoku Univ. v. 46 no. 1 1981 p. 73-92.

Keenlyside, M., Stott, F.H., Wood, G.C., Quantitative compositional analyses of engineering surfaces, using AES: Vacuum v. 31 no. 10-12 Oct-Dec 1981, Proc of the Interdiscip Surf Sci Conf, 5th, ISSC-5, Liverpool, UK, Apr 6-9 1981 p. 631-635.

King, M.J., Chuah, K.B., Olszowski, S.T. and Thomas, T.R., Roughness characteristics of plane surfaces based on velocity similarity laws: ASME/ASCE Bioeng., Fluid Eng. & Appl. Mechs. Conf., Boulder, Colorado, Paper 81-FE-34 (June 1981).

Korosi, G., Kovats, E., Characterization of low energy surfaces by a standard surface method: Sz. Colloids Surf. v. 2 no. 4 May 1981 p. 315-355.

Koura, M.M. and M.A. Omar, The effect of surface parameters on friction: Wear, 73, p. 235-246 (1981).

Kozlov, V.V., Zavodov, Yu.K., Sashina, L.A., Relief checking for large surface areas: Meas.Tech. v. 24 no. 7 Jul. 1981 p. 544-547.

Kubo, A., Okamoto, T., Kurokawa, N.J., Contact stress between rollers with surface irregularity: Mech.Des.Trans.ASME v. 103 no. 2 Apr.1981 p. 492-498.

Kuznetsov, Ye.A. and G.A. Gorokhovsky, Effect of Tangential load on the Stressed State of Rubbing Rough Bodies: Wear, 73, p. 41-59 (1981).

Leonhardt, K., Pfister, B., New optical method for fast, contraction roughness measurement of surfaces: Optik (Stuttgart) v. 58 no. 5 May 1981 p. 297-319.

Lewkowicz, A.K. and Das, D.K., Turbulent boundary layers on rough surfaces with and without a pliable overlayer: ASME/ASCE Bioeng., Fluid Eng. & Appl. Mechs. Conf., June 22-24, 1981, Boulder, Colorado.

Mattieu, H.J. and D. Landolt, R. Schumacher, The application of auger electron spectroscopy to the study of wear surfaces: Wear, 66, p. 87-100 (1981).

Medyantseva, L.L., Leonov, V.V., Gorbacheva, V.V., Metrological Support to means of measuring deviations from rectilinearity and planarity: Meas.Tech. v. 2 no. 7 Jul. 1981 p. 541-543.

Meijer, J. and W. de Bruin, Determination of flatness from straightness measurements and characterization of the surface by four parameters: Precis Eng. V3 nl Jan. 1981p. 17-22.

Murthy, R.L., Kotiveerachari, B., Burnishing of Metallic Surfaces - a review: Precis.Eng. v. 3 no. 3 Jul. 1981 p. 172-179.

Nawara, Leszek, Kowalski, Marek, Kaczmarek, Jan, Investigations of the variability of the result of measurements realized by multicoordinate measuring machines on circular sections with determined types of roundness errors: Ann CIRP v. 30 no. 1 1981.Manuf Technol, Gen Assem of CIRP, 31st, Toronto, Ont, Can, Aug 30-Sep 5 1981. Tech Rundsch, Div of Hallwag Ltd, Berne, Switz, 1981 p. 437-440.

Nielsen, Niels J., Shackelford, James F., Nondestructive inspection of surface topography by electrical discharge imaging: Int Adv Nondestr Test v. 8 1981 p. 151-165.

Nowicki, Bogdan, Kaczmarek, Jan, Investigations of the surface roughness range: Ann CIRP v. 30 no. 1 1981, Manuf Technol, Gen Assem of CIRP, 31st, Toronto, Ont, Aug 30-Sep 5 1981, Tech Rundsch, Hallwag Ltd, Berne, 1981, p. 493-497.

Osanna, P.H., Dreidimensionales Messen (Three-dimensional measurements): Frankfurt, Future 80, Ingenieur-Digest, Chapter Meß- und Prüftechnik, 1981, p. 216-218.

Pandit, S.M., Revach, S., Data dependent systems approach to dynamics of surface generation in turning: J Eng Ind Trens ASME v. 103 no. 4 Nov 1981 p. 437-445.

Powell, Ian, Aspheric Surface Calibrator: Appl.Opt. v. 20 no. 19 Oct.l 1981 p. 3367-3377.

Prakash, A., Struik, K., Roughness measurement of highly polished, mirror-finished surfaces: Precis.Eng. v. 3 no. 4 Oct.1981 p. 215-219.

Radhakrishnan, V., O.V. Krishnaiah Chetty and B.T. Achyutha, Application of a relocation technique to the study of surface production in electrochemical machining and electrodischarge machining: Wear, 68, p. 1-6 (1981).

Rasigni, Monique, Rasigni, Georges, Palmari, Jean Pierre, Study of surface roughness using microdensitometer analysis of electron micrographs of surface replicas - 2. Autocovariance Functions: J.Opt Soc.Am. v. 71 no. 10 Oct. 1981 p. 1230-1237.

Rasigni, Monique, Rasigni, Georges, Palmari, Jean Pierre, Llebaria, Antoine, Study of Surface Roughness using a microdensitometer analysis of electron micrographs of surface replicas - 1. Surface Profiles: J.Opt Soc.Am. v. 71 no. 9 Sep. 1981 p. 1124-1133.

Rasigni, Monique, Varnier, Francoise, Rasigni, Georges, Palmari, Jean Pierre, Validity of surface-roughness study using microdensitometer analysis of electron micrographs of surface replicas: J.Opt.Soc.Am. v. 71 no. 12 Dec. 1981 p. 1549-1550.

Risko, Donald G., Quick, non-destructive method for measuring surface finish using capacitance: Carbide Tool J v. 13 no. 1 Jan-Feb 1981 p. 26-29.

Salik, J., and Buckley, D.H., Effect of Mechanical Surface and Heat Treatments on Erosion Resistance: Wear Mater 1981. Presented at the Int.Conf. San Francisco. Calif. Mar.30-Apr. 1 1981. ASME, New York, 1981, p. 592-596.

Sarkar, A.D., Scanning electron microscopy observations of worn surfaces of metals in tribological contact with loose solid particles: Wear, 73, p. 311-323 (1981).

Sato, H., O-hori, M., Tsuwa, H., Characteristics of two dimensional surface roughness - taking self-excited chatter marks as objective: Ann CIRP v. 30 no. 1 1981, Manuf.Technol. Gen.Assem. of CIRP, 31st, Toronto, Ont.Can. Aug. 30-Sep. 5 1981. Tech. Rundsch, Div. of Hallwag Ltd. Berne, Switz. 1981 p. 481-486.

Sayles, R.S., & S.Y. Poon, Surface topography and rolling element vibration: Precis.Engv. 3 no. 3 July 1981. p. l37-144.

Schuchardt, Gerd, Automatic, high-precision flatness testing of large surfaces: Jena Rev. v. 26 no. 4 1981 p. l54-157.

Snaith, B., Edmonds, M.J., Probert, S.D., Use of a profilometer for surface mapping: Precis.Eng. v. 3 no. 2 Apr. 1981 p. 87-90.

Sommargen, Gary E., Optical heterodyne profilometry: Applied Optics, v. 20 no. 4 Feb 15 1981 p. 610-618.

Sommargren, G.E., Optical measurement of surface profile: Precis.Eng. v. 3 no. 3 Jul. 1981 p. l31-136.

Sparrow, Gene R., Drummond, I.W., Surface analysis, Selecting a technique and an instrument: Ind Res Dev v. 23 no. 8 Aug 1981 p. 112-115.

Stout, K.J., Surface Roughness-measurement, interpretation and significance of data,-1. Statistical parameters: Mater.Eng.(Surrey Engl.) v. 2 no. 5 Sep. 1981 p. 260-265.

Stout, K.J., Surface roughness-measurement, interpretation and significance of data: Mater.Eng.(Surrey Engl.) v. 2 no. 6 Dec. 1981 p. 287-295.

Strachan, D.C. and D.M. Paul and A.W. Bowen. D.L. Naylor, Investigation of a laser scattering technique for the study of micropitting in test gears: Wear, 72, p. 219-236. (1981).

Tandon, P.N. and Leela Rakesh, Effects of cartilage roughness on the lubrication of human joints: Wear, 70, p. 29-36 (1981).

Taneeranonon, P. and W.O. Yandell, Microtexture roughness effect on predicted road-tyre friction in wet conditions: Wear, 69, p. 321-337(1981).

Tanner, L.H., A self-balancing pneumatic potentiometer and Wheatstone bridge with electrical readout. Applications to surface roughness measurement, pneumatic gauging and to measurement of pressure difference ratios: Precis.Eng. v. 3 no. 4 Oct. 1981 p. 201-207.

Teague, E. Clayton, Vorburger, Theodore V., Maystre, Daniel, Young, R.D., Light scattering from manufactured surfaces: Ann CIRP v. 30 no. 2 1981 p. 563-569.

Thomas, T.R., Characterization of Surface Roughness: Precis.Eng. v. 3 no. 2 Apr. 1981 p. 97-104.

Thomas, T.R., and Charlton, G., Variation of roughness parameters on some typical manufactured surfaces: Precis.Eng. v. 3 no. 2 Apr.1981 p. 91-96.

Trapeznikov, V.A., Kortov, V.S., Maksyutov, F.B., Use of X-Ray photoelectron spectroscopy in the examination of the surface roughness of specimens for exoemission investigations: Sov.J.Nondestr.Test v. 17 no. 4 Apr. 1981 p. 311-314.

Tsukada, Tadao, and Kazuyuki Sasajima, A three-dimensional measuring technique for surface asperities: Wear, 71, p. 1-14 (1981).

Vajpayee, S., Analytical study of surface roughness in turning: Wear, 70, p. 165-175 (1981).

Venables, John A., Electron Microscopy of Surfaces: Ultramicroscopy v. 7 no. 1 1981.Scanning Transm Electron Microsc. in Solid State. Sci. Castle Hot Springs. Ariz. Jan 12-16 1981. p. 81-98.

Vorburger, T.V., Teague, E.C., Optical Techniques for on-line measurement of surface topography: Precis.Eng. v. 3 no. 2 Apr. 1981 p. 61-83.

Williams, R.H., King, David A., and Inglesfield, John E. (eds.): Proc. Interdiscip. Surf. Sci.Conf., 5th, ISSC-5, Liverpool, Apr 6-9 1981, Vacuum,. 31 no. 10-12 Oct-Dec 1981, p. 397-727.

Zipin, Richard B., Height Sensitive Surface Roughness Parameters: Appl.Surf.Sci. v. 9 no. 1-4 Sep.-Dec. 1981. Symp. on Appl. Surf. Anal. 3rd, Dayton. OH, Jun.3-5 1981 p. 266-287.

## 1982

Akella, S.R. Murty, and K.K. Padmanabhan, Effect of surface topography on damping in machined joints: 2nd Int.Conf.on Met. Prop. of Eng.Surf. p. 11, Apr 1-16 (1982).

Ananthapadmanaban, T., and Radhakrishnan, V., An investigation on the role of surface irregularities in the noise spectrum of rolling and sliding contacts: 2nd Int.Conf. on Metrology properties of Eng.Surfaces. p. 10, Apr. 1-16, 1982.

Anon., Form and texture, measuring curved surfaces in one go: Prod Eng (London) v. 61 no. 6 Jun. l982 p. 20-.

Burton, D., and Lalor, M.J., Assessment of surface texture from analysis of the signal visibility of a Laser Doppler Anemometer:

2nd Int.Conf. on Metrology & Properties of Eng. Surfaces. p. 8, Apr. 1-16 (1982).

Bush, A.W, R. D. Gibson, and P. H. Skinner, Surface roughness effects in point contact EHL: 2nd Int Conf on Metrology and properties of EngSurfaces p. 15, Apr 1-16 (1982).

Chetwynd, D.G, F. A. McKee, J. H. Rakels, Machined surfaces, Final texture and underlying structure: 2nd Int Conf on Metrology and properties of Eng Surfaces p. 7, Apr 1-16 (1982).

Chetwynd, D.G, M.A. Ganss, The influence of nominal contact area planform on friction force: 2nd Int Conf on Metrology and properties of Eng Surfaces p. 6, Apr 1-16 (1982).

Chien, A.I., Approximate harmonic models for roundness profiles with equivalent energy mean square values: Wear, 77, p. 247-252.(1982).

Chuah, K.B, S.T. Olszowski, T.R. Thomas, Plate roughness and hydrodynamic drag: 2nd Int Conf. on metrology & Properties of Eng. Surfaces. p. 17. Apr. 1-16 (1982).

Church, E L and H. Berry, Spectral analysis of the finish of polished optical surfaces: Wear, V. 83, No.1, p. 189-201, (December 1, 1982).

Clayton, E., Teague, Fredrick E. Scire, and Theodore V. Vorburger, Sinusoidal profile precision roughness specimens: 2nd Int Conf on Met and Prop of Eng Surf p. 12 Apr 1-16 (1982).

Cohen, ?, Tenoudji, J.E., and Quentin, G.J., Characterisation of Surfaces by deconvolution of ultrasonic echoes using extended bandwidth: Appl.Phys. v. 53 no. 6 Jun. 1982 p. 4057-4063.

Davis, E.J. and K.J. Stout, Stylus measurement techniques. A contribution to the problem of parameter variation: 2nd Int.Conf.on Metrology & Properties of Eng.Surfaces. p. 15 Apr.1 (1982).

Dishijima, J.M., Masuda, S., Kobayashi, H, Onchi, M., Apparatus for high-resolution vibrational electron energy-loss spectroscopy of solid surfaces: Rev.Sci.Instrum. v. 53 no. 6 Jun1982 p. 790-796.

Engel, P.A. and H.B. Millis, Study of surface topography in impact wear: Wear, 75, p. 423-442. (1982).

Ennos, A.E. and M.S. Virdee, High accuracy profile measurement of quasi-conical mirror surfaces by laser autocollimation: Precis.Eng.1, Jen. 1982 p. 5-8.

Fahl, D., Motif Combination: 2nd Int.Conf.on Met.&Prop. of Eng. Surf. p. 15 Apr.1-16, 1982.

Farago, F.T., Handbook of dimensional measurement, 2nd Ed: Industrial Press, New York (1982).

Forsyth, I and D. Scott, Micro-Machined Mirror surfaces from high speed diamond fly-cutting: 2nd Int.Conf. on Met. & Prop. of Eng.Surf. p. 9 Apr. 1-16 (1982).

Francis, H.A., A finite surface element model for plane-strain elastic contact: Wear, 76, p. 221-245 (1982).

Garrat, J. D., New stylus Instrument with a wide dynamic range for use In surface metrology: Precision Engineering, V.4, No.3, p. 145-151, (July 1982).

Garratt, J.D., Applications for a wide range stylus instrument in surface metrology: 2nd Int.Conf. on Met. & Prop. of Eng.Surf. p. 11, Apr. 1-16 (1982).

Gauler, Allen L., On the characterisation of spherical surfaces: 2nd Int.Conf. on Met. & Prop. of Eng.Surf. p. 7 Apr. l-l6 (1982).

George, A.F. and S. J. Radcliffe, Automated wear measurement on a computerised profilometer: 2nd Int Conf on Met and prop of Eng Surf p. 7, Apr 1-16 (1982).

Gerhard K., Finishing of metals by ion beams: Chem.Ing.Tech. v. ?, no. 1 Jan. 1982 p. 23-32.

Gezanhes, C, Càlaora, A., Condat, R., Acoustical measurement of surface roughness by speckle correlation: Signal Process no. 2-3 Apr 1982 p.

Halling, J., Role of surface films In the frictional behaviour of lubricated and Dry contacts-A unifying Influence In the tribological theory: ASLE Transactions, V.25, No.4, p. 528-536, (October 1982).

Hamilton, D. K., Wilson, T., Three-dimensional surface measurement using the confocal scanning microscope: Appl Phys g v. g27Apr 1982 211-213.

Holburn, D.M. and Smith, K.C.A., Topographical analysis in the SEM using an automatic focusing technique: J. Microscopy, 127, 1, p. 93-103 (July 1982).

Horiuchi, T., Y. Tomita and R. Kammel, Surface roughness measurement with speckle intensity distribution detected using a linear Image sensor: Japan Journal of Applied Physics part 2, V.21, No.12, p. 743-745, (December 12, 1982).

Jakeman, E., Fresnel scattering by a corrugated random surface with fractal slope: J. Opt. Soc. Am., 72, 8, p. 1034-1041 (August 1982).

Jakeman, E. and Hoenders, B.J., Scattering by a random surface of rectangular grooves: Optica Acta, 29, 12, p. 1587-1598 (1982).

Jauhari, P.S., J. Pande, and V. K. Kapur, Two-dimensional hydrodynamically lubricated sliders: Wear, 77, p. 267-275 1982).

King, M.J., The measurement of ship hull roughness: 2nd Int Conf on Met and prop of Eng Surf.p. 1 Apr l'-16 (1982).

King, T.C. and T. A. Spedding, On the relationships between surface profile height parameters: 2nd Int Conf on Met and Prop of Eng Surf p. 16 Apr l7-16 (1982).

Konczakowski, A. and M. Shiraishi, Sampling error in a/d conversion of the surface profile signal: Precis.Eng. no. 3 July 1982 p. 159-161.

Konde, T., Dakano, M., Tsukiuchi, J., High-sensitive moiré topography for measuring errors in curved smooth surfaces: Opt Commun v. 7l no. 7 Apr 15 1982 p. 226-230.

Krause, Hans and Krzysztof Wierzcholski, The influence of sleeve surface roughness on the load-carrying capacity of journal bearings in a magnetic field: Wear, 80, p. 89-70 (1982)-.

Kuznetsov, E. A., Effect of surface roughness on the stress-strain state of rubbing bodies: Soviet Applied Mechanic, V.18, No.8, p. 757-762, (August 1982).

Lukyanov, Dr. V.S., V.G. Lisenko, The measurement of the surface topographic parameters described by the composition of the random and deterministic components: 2nd Int.Conf. on Met,& Prop. of Eng.Surf, p. l0 Apr. 1-16 (1982).

Majumdar, B.C. and Hamrock, B.J., Effect of surface roughness on elastohydrodynamic line contact: J. Lub. Tech., 104, p. 401-409 (July 1982).

Mathia, T. G. Maeder, F. Louis, D. Mairey, Relationships between surface states, finishing processes and engineering properties: 2nd Int.Conf.on Met.& Prop.of Eng.Surf. p. 9 Apr. 14-16 (1982).

McCallion, N. and N. Truong, The deformation of rough cylinders compressed between smooth flat surfaces of hard blocks: Wear, 79, p. 357-361 (1982).

McCool, J.I., Finite difference spectral moment estimation for profiles, the effect of sample spacing and quantisation error: Prec. Eng., 4, 4, p. 181-184 (October 1982).

Mulvaney, D.J., and W. Scott, An improved method for analysing surface topography information: Wear, 77, p. 329-336 (1982).

Murthy, T.S.R, G.C. Reddy, and V. Radhakrishnan, Different functions and computations for surface topography: 2nd Int.Conf on Met.& Prop. of Eng.Surf. p. , 0 Apr 14-16 (1982).

Murthy, T.S.R, C.C. Reddy,. Radhakrishnan, Evaluation of form errors of axi-symmetric components: 2nd Int.Conf.on Met.Prop.of Eng.Surf. p. 6 Apr. 1-16 (1982).

Osanna, P. Herbert, Deviations of form and workpiece accuracy: 2nd Int.Conf. on Met.& Prop.of Eng.Surf. p. 9 Apr. 1-16 (1982).

Phan-Thien, N., On the mean Reynolds equation In the presence of homogeneous random surface roughness: Journal of Applied Mechanical Transactions ASME, V.49, No.3, p. 476-480, (September 1982).

Prakash, J. and Tiwari, K., Effect of surface roughness s on the squeeze film between rotating porous annular discs: Journal of Mechanical Engineering Science, V.24, No.3, p. 155-161, (September 1982).

Rasigni, G., F. Varnier, M. Rasigni, J. P. Palmari and A. Llebaria, Roughness spectrum for surfaces of silver deposits:

Applied Optic Commun, V.43, No.6, p. 409-413, (November 6-15, 1982).

Rathnasatapathy, C. and R. Krishnamurthy, Surface durability of shaved spur gears: 2nd Int Conf on Met end Prop of Eng Surf p. 8 Apr 1-16 (1982).

Remereo, P.V. and A. Eeruqi, Characteristics of the surfaces obtained in electro-discharge machining: Precis. Eng. v.no. 2 Apr 1982 p. 111-113.

Robinson, R. S. and S. M. Rossnagel, Ion-Beam induced topography and surface diffusion: Journals of Vac. Science Technology, V.21, No.3, p. 790-797, (September-October1 1982).

Rudzit, Ye. A., and Krie'erg, Yu. Ye. Raschet veroyetnost'ikh kharakteristik: Trenie i Iznos 3, 1048-1057 (1982).

Sarkar, A.D. and J. Clarke, Wear characteristics, friction and surface topography observed in the dry sliding of as-cast and age-hardening Al-Si alloys: Wear, 75, p. 71-85 (1982).

Senholzi, Peter B., Tribological Technology, v. I & 2: Martinus DiJhoff Publishers. 1982.

Shneyder, Yu. G., Operational Characteristics of Work-pieces with Regular Microrelief, 2nd ed. (in Russian): Leningrad, Machine building, 1982.

Sinha, P., Shukla, J.B., Singh, C. and Prasad, K.R., Non-Newtonian lubrication theory for rough surfaces, application to rigid and elastic rollers: J. Mech. Eng. Sci., 24, 3, p. 147-154 (1982).

Stout, K. J. and Speddıng, T. A., The characterization of internal combustion engine bores: Wear, v. 83, p. 311-326, 1982.

Sugawara, A, Ingaki, K., Effect of workpiece structure on burr formation in micro-drilling: Precıs.Eng 1 Jan. 1982, p. 9-11.

Tanimura, Y,. C. Teague,. E.Scire and T. V. Vorburger, Graphical signature for manufactured surfaces: Journal of Lubrıcation Technology Transactions ASME, V.104, No.4, p. 533-537, (October 4, 1982.

Thomas, T. R., ed., Rough Surfaces: Longman, London, 249 p. (1982a).

Thomas, T.R., Defining the microtopography of surfaces in thermal contact: Wear, 79, p. 73-82. (1982b).

Thwaite, E.G., A quantitative comparison of the wavelength spectrum of a surface obtained by optical Fourier transformation wıth calculations from profile measurements: 2nd Int Conf on Met and Prop of Eng Surf p. 6 Apr 1-16 (1982).

Timsit, S., The true area of contact between a liquid and a rough solid, elementary considerations: 2nd, Int.Conf.on Met.& Prop.of Eng.Surf. p. , 0 Apr. 1-16 (1982).

Tsukada, Tadao, and Kazuyuki Sasajima, An optimum sampling-interval for digitising surface asperity profile: 2nd Int.Conf.on Met.& Prop. of Eng, urf, p. 7. Apr.1-16 (1982).

Turley, D.M. and E.D. Doyle, The importance of surface characterisation in surface treatment processes: Wear, 81, p. l45-158 (1982).

Vorburger, T.V., F.E. Scire & E.C. Teague, Hydrodynamic Drag versus roughness for Rotating Disks: 2nd Int.Conf.on Met.& Prop.of Eng.Surf. p. l0 Apr, -16 (1982).

Walsh M-I- YOlles, E.H. Smith, and W.M. Walmsley, Moment analysis of engineering surfaces: 2nd Int Conf.on Met.& Prop. of Eng.Surf. p. S Apr. 1-16 (1982).

Wambold, J.C., J.J. Henry, and R. Hegmon, Evaluation of pavement surface texture significance and measurement techniques: 2nd Int.Conf.on Met. Prop. of Eng.Surf p. l6 Apr.1-16 (1982).

Wang, Tenhui, Bauer, Bernd, and Mughrabi, Hael, I., Study of surface-roughness profiles of fatigued metals by scanning electron microscopy: Metallkd v. 73 no. 1 Jan 1982 p. 30-32.

Watson, W., T.A. Spedding, The time series modelling on non-gaussian engineering processes: 2nd Int.Conf.on Met. Prop.of Eng.Surf. p. 18 Apr. 1-16 (1982).

Whitehouse, D.J., The parameter rash - is there a cure?: 2nd Int. Conf. on Met.& Prop.of Eng. Surf., paper, Apr. 1-16, 1982; [published in Wear, v. 83, no. 1, p. 75-78, (1982a)

Whitehouse, D.J., Surface texture assessment errors of finishing processes caused by skid distortion: J. Phys. E, Sci. Instrum., 15, p. 1337-1340 (1982b).

Whitehouse, D.J., and Phillips, M.J., Two-dimensional discrete properties of random surfaces: Philosophical Transactions of the Royal Society, Series A, v. 305, no. 1490, p. 441-468, (1982).

# 1983

Ahlers, R.J., Optical procedure for surface roughness determination: Tech Mess TM, V.SO, No.6, p. 233-236, (June 1983).

Alstad, J.K. and N. A. Feliss, Surface roughness measurement: IBM Tech Discl Bulletin, V.25, No.11B, p. 6009-6010, (April 1983).

Anon: Roughness measurement by electrical stylus recorders. Part 2. New approaches and development trends: Tech Mess TM, V.50, No.6, p. 219-224, (June 1983).

Barash, V.Y. and A.I. Reznikov, Standard vibrator In metrological certification of contact methods of roughness measurement: Measurement Technology, V.26, No.8, p. 658-661, (August 1983).

Brock, M., Fourier analysis of surface roughness: Bruel Kjaer Tech Rev, No.3, p. 3-45, (1983).

Brodmann, R., G. Huebner, N. Rau and W. Staiger, Surface quality Inspection In rocker arm manufacturing using an optical roughness measuring device-: IPE Institute of Industrial Production Engineering, V.7, No.3, p. 1 26-1 28, (1983).

Chuah, K.B., Olszowski, S.T. and Thomas, T.R., Application of microcomputers in the studies of surface roughness and hydrodynamic characteristics of plane surfaces coated with an ablative paint: BHRA Fluid Eng., Int. Conf. on Use of Micros in Fluid Eng., London, Paper F1, p. 207-220 (June 1983).

Church, E.L., Direct comparison of mechanical and optical measurements of the finish of precision-machined surfaces: Proc. SPIE 429, p. 105-112 (1983).

Church, E.L., The precision measurement and characterisation of surface finish: Proc. SPIE 429, p. 86-95 (1983).

Drews, W.E., New parameters for surface finish measurement: Carbide Tool Journal, V.15, No.1, p. 23-25, (January-February 1983).

Fedoseev, O.B., and A. N. Karpus, Preliminary calculation of roughness parameters for grinding of high-hot-strain and tool materials with SHM wheels: Soviet Journal of Superhard Materials, V.S, No.2, p. 67-72, (1983).

Forman, R. and G. G. Lesny, Development of computerised Auger microprobe techniques for the chemical mapping of rough submicron surfaces: Applied Surface Science, V.14, No.2, p. 157-172, (January-February 1983).

Francis, H.A., Accuracy of plane strain models for the elastic contact of three-dimensional rough surfaces: Wear, V.85, No.2, p. 239-256, (March 1, 1983).

Gorecki, C., G. Tribillon and J. Mignot, Optical profilometer In white light: Japanese Journal of Opt, V.14, No.1, p. 19-23, (January-February 1983).

Harries, C.J., M. Webster, R. S. Sayles, MacPherson, Bi-modal failure mechanisms In tribological components: Reliability Engineering, V.4, No.3, p. 169-180, (March 1983).

Hasegawa, M., K. Kayaba, S. Ikeda and S. Kawamura, Statistical considerations on the characterization of engineering surface: Bulletin Japan Society of Precision Engineering, V.17, No.3, p. 207-208, 24, (September 1983).

Hughes, F.J, and M. H. Schankula, Computer-aided surface- roughness- measurement system: At Energy Can Ltd AECL Flep, V.6829, p41p., (November 1983).

Izmailov, V.V. and M. S. Kuriva, Use of the Beta-distribution for calculating the contact characteristic of Rough-bodies: Trenie Iznos, V.4, No.6, p. 983-990, (1983).

Jordan, D.L., Hollins, R.C. and Jakeman, E., Experimental measurements of non-Gaussian scattering by a fractal diffuser: Appl. Phys., B31, p. 179-186 (1983).

Keenside, M., F. H. Scott, and G. C. Wood, Ion sputtering in the surface analysis of practical- surfaces: Surface Interface Analysis, V.5, No.2, p. 64-70, (April 1983).

Konczakowski, A.L., Matrix of power spectra levels of turned surfaces roughness: International Journal of Machine Tools Designresearch, V.23, No.2-3, p. 161-167, (1983).

Levi, A.C., R. Spadacini, and G. E. Tommei, Theory of atom scattering from disordered surface: Vide Couches Minces, v.28, No.216, p. 117-178, (March-April 1983).

Lopez-Rios, T., G. Vuye and Y. Borensztein, Roughening of smooth cold Ag surface by Ag Overlayer studied by differential reflectivity: Journal of Physics (Paris) Lett, V.44, No.3, p. 99-104, (February 1, 1983).

Losev, V.A., A.L. Lur'e, Y.B. Serebrennik, E.L. Prudnikov and A.S. Zaritskii, Formation of surface roughness during surface finishing: Soviet Journal of Superhard Materials, V.5, No.1, p. 55-59, (1983).

McCool, J.I., Limits of applicability of elastic contact models of rough surfaces: Wear, 86, p. 105-118 (1983).

Mignot, J., and C. Gorecki, Measurement of surface roughness, Comparison between a detect-of-focus optical technique and the classical stylus technique: Wear, V.87, No.1, p. 39-49, (May 2, 1983).

Myshkin, N.K., Petrokovets, M.I., Chizhik, S.A., Konchits, V.V. and Sviridenok, A.I., Contact of rough bodies and its conductivity: Trenie i Iznos, 4, 5, p. 845-853 (1983).

North, W.P.T. and A. K. Agarwal, Surface roughness measurement with fibre-optics: Journal of Dynamic System Measurement Control Transaction ASME, V.105, No.4, p. 295-297, (December 1983).

Nowicki, B., Three dimensional model of contact surface: Zagadienia Eksploatacji Maszyn, Zeszyt 3 (55), p. 245-254 (1983).

Obradovich, K.A. and Y. N. Popov, Reflectometer determination of the autocorrelation function for the roughness heights on a polished metal surface: Measurement Technology, V.26, No.2, p. 100-105, (February 1983).

Rasigni, G., F. Varnier, J. P. Palmari, N. Mayani, and M. Rasigni, Study of surface roughness for thin film of CaF deposited on glass substrate: Optic Communication, V.46, No.5-6, p. 294-299, (July 15, 1983).

Rasigni, G., F. Varnier, M. Rasigni, and J. P. Palmari, J. P, Autocovariance functions for polished optical surfaces: Journal of Optical Soc Am, V.73, No.2, p. 222-233, (February 2, 1983).

Rouard., P., Characterization and effects of roughness of metallic surfaces and optical polished surfaces: Thin Solid Films, V.100, No.4, p. 359-369, (February 25, 1983).

Sayles, R.S., The use of discriminant function techniques in reliability assessment and data classification: Reliability Eng., 6, p. 103-124 (1983).

Semenyuk, N.F. and Kalmykova, T.F., Real areas of elastic contact of anisotropic rough-surface with smooth-surface: Trenie i Iznos, 4, 3, p. 467-475 (1983).

Sinaiski, V.M., Qualitative evaluation of roughnessIn machined surfaces of the higher class of finish by x-ray reflectometry: Measurement Technology, V.26, No.6, p. 460-462, (June 1983).

Sinha, P. and C. Singh, Microcontinuum analysis of squeeze films between rough surfaces: Wear, V.89, No.1, p. 69-82, (August 1, 1983).

Solodukho, F.M., Reflectometric roughness measurement for ultrasmooth surfaces: Measurement Techniques, V.26, No.10, p. 810-816, (October 1983).

Thurn, G. and T. Gast, Optical testing of surfaces of diffused light: F & M Feinwerktech Messtech, V.91, o.1, p. 15-18, (January-February 1983).

Tsukada, T. and K. Yanagi, Application of CCD Image sensor to a measurement of surface roughness: Bulletin Japan, Society of Precision Engineering, V.17, No.3, p. 209-210, (September 1983).

Tsukada, T. and Sasajima, K., An assessment of anisotropic properties in three-dimensional asperities: Bull. Japan Soc. of Prec. Eng., 17, 4, p. 261-262 (1983).

Vajpayee, S., Analytical study of surface roughness in turning: Microtechnic, No.2, p. 50-53, (1983).

Vitenberg, R., Combined methods for controlling roughness parameters: Soviet Engineering Research, V.3, No.11, p. 11-14, (November 1983).

Wyant, J.C., Precision surface metrology (proceedings), 983: Proceedings of SPIE-The international Society for Optical Engineering, V.429, 207 p. , (August 23-24, 1983).

Wright, K., and Karlsson, B., Topographic quantification of non-planar localized surfaces: Journal of Microscopy, v. 130, no. 1, p. 37-51, (1983).

Zipin, B., Analysis of profile strata for surface texture specification: Applied Surface Science, V.15, No.1-4, p. 334-358, (April 1983).

## 1984

Andrievskii, B.V., Y. V. Burak, 0. V. Leshchenko, N. Romanyuk and A. S. Sai, Determination of roughness parameters for supersmooth surfaces: Industrial Laboratory (USS~), V.50, No.10, p. 981-984, (October 1984).

Aronov, V., A.F. D'Souza, S. Kalpakjian and I. Shareef: Interaction among friction, wear, and system stiffness- part 1, Effect of normal load and system stiffness: Journal of Tribology Transactions ASME, V.106, No.1, p. 54-58, (January 1984).

Aronov, V., A.F. D'Souza, S. Kalpakjian and I. Shareef: Interaction among friction, wear, and system stiffness-Part 3, Wear model: Journal of Tribology Transactions ASME, V.106, No.1, p. 65-69, (January 1984).

Aronov, V., A.F. D'Souza, S. Kalpakjian and I. Shareef: Interactions among friction, wear, and system stiffness Part 2, Vibrations induced by dry friction: Journal of Tribology Transactions ASME, V.106, No.1, p. 59-64, (January 1984).

Asherov, Y.V., Y.V. Zaikin and A. Y. Papaev, Ellipsometric study of the surface quality during abrasive treatment of Molybdenum: Trenie i Iznos, V.5, No.3, p. 474-480, (May-June 1984).

Asherov, V., V. Zaikin and A. Y. Papaev, Polished metal surface roughness measurement: Soviet Journal Friction Wear, V.5, No.4, p. 59-64, (1984).

Bengtsson, A. and A. Ronnberg, Wide range three-dimensional roughness measuring system: Precision Engineering, V.6, No.3, p. 141-147, (July 1984).

Brodmann, R., Optical measurement of surface roughness In manufacturing: Automobiltech Z, V.86, No.11, p. 521-525, (November 1984).

Brodmann, R., 0. Gerstorfer and H. Paisdzior, Optical surface roughness measurement In practise: Werkstatt Betr, V.117, No.11, p. 669-672, (November 1984).

Cabrera, N., J.M. Soler, J.J. Saenz, N. Garcia and R. Miranda, Thermodynamics of the roughening transition in stepped surfaces: Physica B & C, Proceedings of the 4th General Conference of the Condense Matter Div of the EPS, The Hague, Netherlands., Mar 19-22 1984., V.127 B-C, No.1-3, p. 175-179, (December 1984).

Chuard, M., A. C. Roudot and J. Mignot, On the use of a modular system for microtopographical surface measurement: Wear, V.96, No.l, p. 31-44, (June 1, 1984).

Chuard, M., D. Rondot and J. Mignot, Numerical filtering used In microtopographical surface measurement: Wear, V.97, No.3, p. 267-274, (September 15, 1984).

Deelman, J.C., Textural analysis of concrete by means of surface roughness measurements: Mater. Constr., 17, 101, p. 359-367 (1984).

Dobosz, M., Optical method of roughness measurement light-scattering method: Mech Mies Nauk Tech, V.57, No.10, p. 529-532, (October 1984).

Dobosz, M., Accuracy of profile measurements by means of a focused laser beam: Wear, V.98, No.1-3, p. 117-126, (November 8, 1984).

Don, H-S., Fu, K-S., Liu, C.R. and Lin, W-C., Metal surface inspection using image processing techniques: IEEE Trans. on Systems, Man & Cybernetics, SMC-14, 1, p. 139-146 (January/February 1984).

Dvinyaninov, B.L., Influence of part material on the results of measurement of the roughness parameters R by the reflectometric method: Industrial Laboratory (USSR), V.50, No.2, p. 159-162, (February 1984).

Glaesar, W.A.?, Use of surface analysis techniques in the study of wear: Wear, V.100, No.1-3, p. 477-487, (December 1984).

Goglia, P.R., T. F. Conry and C. Cusano, Effect of surface Irregularities of the elastohydrodynamic lubrication of sliding line contact. Part I-Single Irregularities: Transactions ASME Journal of Tribology, V.106, No.1, p. 104-112, (January 1984).

Greenwood, J.A., Unified theory of surface roughness: Proceedings of Royal Society of London Series A., V.393, No.1804, p. 133-157, (May 8, 1984).

Guenther, K.H., P. G. Wierer and J. M. Bennet, Surface roughness measurements of low-scatter mirrors and roughness standards: Applied Optics, V.23, No.21, p. 3820-3836, (November 1, 1984).

Hanschke, C. and E. Menzel, Surface topography by cone microscopy: Optik (Stuttgart), V.66, No.2, p. 137-148, (January 1984).

Hillmann, W., 0. Kranz and K. Eckolt, Reliability of roughness measurement using contact stylus Instruments with particular reference to results of recent research at Physikalisch-Technische Bundesanstalt: Wear, V.97, No.l, p. 27-43, (August 1984).

ISO, Surface roughness - Terminology, Part 1, surface and its parameters: Geneva, International Organisation for Standardisation, ISO standard 4287/1. 1984.

Jansson, D.G., J. M. Rourke and A. C. Bell, High-speed surface roughness measurement: Journal of Engineering Ind Trans ASME, V.106, No.l, p. 34-39, (February 1984).

Konczakowski, A. and M. Shiraishi, Evaluation of discrete displacement transducer by spectral analysis of surface roughness: Precision Engineering, V.6, No.4, p. 187-192, (October 1984).

Krevsun, E.P., Comparison of the friction characteristics of friction pairs with various surface roughnesses: Soviet Engineering Research, V.4, No.7, p. 11-13, (July 1984).

Krizan, B., Surface roughness parameters: Strojarstvo, V.26, No.2, p. 109-115, (March-April 1984).

Leng A.and J. Davies, Use of cellulose acetate replicas In tribology: South Africa Mechanical Engineering, V.34, No.3, p. 77-79, ( March 1984).

Leonhardt, K., E. Kaufmann and H. J. Tiziani, Determination of average roughness and profile autocorrelation width of metallic surfaces with a whitelight sensor: Optics Communications, V.51, No.6, p. 363-367, (October 15, 1984).

Mandelbrot, B.B., Passoja, D.E., and Paullay, A.J., Fractal character of fracture surfaces of metals: Nature, v. 308, no. 5961, p. 721-722, (1984).

Marek, Lech, Irena Mruk and Jacek Stupnicki, Comparison of tribological parameters of surfaces determined by the stylus method and by the- Immersion method of holographic Interferometry: Wear, V.93, No.2, p. 167-179, (January 16, 1984).

McCool, J.J., Assessing the effect of stylus tip radius and flight on surface topography measurements: Journal of Tribology Transactions ASME, V.106, No.2, p. 202-210, (April 1984).

Nagaraj, H.S., Elastoplastic contact of bodies with friction under normal and tangential loading: Journal of Tribology Trans ASME, V.106, No.4, p. 519-526, (October 1984).

Nakahara, T., M. Takesue and H..Aoki, Effects of surface roughness and bearing slenderness ratio on hydrodynamic lubrication: Journal JSLE Int Ed, No.5, p. 65-70, (1984).

Obradovich, K.A., Y. V. Popov and F. M. Solodukhov, Reflectometric method of roughnesss measurement for polished metal surfaces: Measurement Techniques, V.27, No.l, p. 14-17, (January 1984).

Pfeifer, P., Fractal dimension as a working tool for surface-roughness problems: Applied Surface Science, V.18, No.1-2, p. 146-164, (May-June 1984).

Rudzit, Ye. A., Methodology of analytic-experimental- determination of friction surface microtopographic parameters: Soviet Journal of Friction Wear, V.5, No.3, p. 57-63, (1984).

Rudzit, Ye. A., Metodicheskie vopros'i raschetno-eksperimental'eskikh (Methodological problem In computational-Experimental Determination of the Microtopographic Parameters of friction surfaces): Trenie i Iznos, V.5, No.3, p. 457-464, (May-June 1984).

Ryspaev, M.T., Measurement of the parameters of Ultralow-frequency voltages In the verification of profilometers and profilographs: Measurement Techniques, V.27, No.10, p. 895-896, (October 1984).

Ryzhov, Y.E. and 0. A. Gorlenko, Interconnection between surface roughness characteristics during honing: Soviet Journal/ of Superhard Materials, V.6, No.3, p. 68-72, (1984).

Santochi, M. and G. Tantussi, Surface parametrical microgeometry and functional models, A new approach: Precision Engineering, V.6, No.4, p. 201-206, (October 1984).

Schneider, Yu.G., Formation of surfaces with uniform micropatterns on precision machine and instrument parts: Prec. Eng., 6, 4, p. 219-225 (October 1984).

Stout, K.J.and E. J. Davies: Surface topography of cylinder bores. The relationship between manufacture, characterization and function: Wear, V.95, No.2, p. 111-125, (April 16, 1984).

Stout, K.J., Optical assessment of surface roughness, The effectiveness of low-cost, commercially-available Instrument: Precision Engineering, V.6, No.1, p. 35-39, (January 1984).

Thwaite, E.G., Measurement and control of surface finish In manufacture: Precision Engineering, V.6, No.4, p. 207-217, (October 1984).

Tonder, K., Rough surfaces based on a new perturbation approach: Journal of Tribology Trans. ASME, V.106 No.4, p. 440-447, (October 1984).

Towbridge, T.S., Rough-surface retroreflection by focusing and shadowing below a randomly undulating Interface: Journal Opt Soc Am A, V.1, No.10, p. 1019-1027, (October 1984).

Usov, P.P., Theoretical study of the Influence of surface roughness on the load capacity of a lubricant film: Soviet Machine Science, No.1, p. 90-98, (1984).

Vorburger, T.V., E. C. Teague, F. E. Scire, M. J. McLay and D. E. Gilsinn, Surface roughness studied with Dallas-Detector Array for lasers light angular scattering: Journal of research National Bur Stand (US), V.89, No.1, p. 3-16, (January-February 1984).

Woodtli-Folprecht, J., Morphometrical evaluation of surface roughness during the initial fatigue stage In an austenitic steel: International Journal of Fatigue, V.6, No.3, p. 157-167, (July 1984).

Yonans, A., Mikrogeometria i Ekspluatacionniye Svoistva Mashin (in Russian; Surface roughness and performance of Machines): Riga Polytechnical Inst., 1984, p. 51-58.

## 1985

Ahlers, R.J., White-light method, A new sensor for the optical evaluation of rough surfaces: Optical Engineering, V.24, No.3, p. 423-427, (May-June 1985).

ASME, Surface texture (surface roughness, waviness, and lay): New York, American Society of Mechanical Engineers, ANSI/ASM standard B.46.I. 1985.

Baker, L.R. and H. E. Bennett, Measurement and effects of surface defects and quality of polish: Proceedings SPIE International Society of Optical Engineering, V. 525, p198, (1985).

Bennett, J.M., Measuring the roughness of optical surfaces: Optical Engineering, V.24, No.3, p. 380-387, (May-June 1985).

Brown, S.R., and Scholz, C.H., Broad bandwidth study of the topography of natural rock surfaces: Journal of Geophysical Research, v. 90, no. B14, p. 12,575-12,582, (1985).

Bushan, B., Wyant, J.C., and Koliopoulos, C.L., Measurement of surface topography of magnetic tape by Mirau interferometry: Applied Optics, v. 24, p. 1489 ff, 1985.

Buzatu, C., Measurement of surface roughness by pneumatic methods: Metrologia Applicata, V.34, No.3, p. 104-105, (1985).

Church, E.L., Statistical effects in the measurement and characterisation of smooth scattering surfaces: Proc. SPIE 511-05 (1985).

Church, E.L. and Takacs, P.Z., Survey of the finish characteristics of machined optical surfaces: Proc. SPIE 508-14 (1985).

Church, E.L., Vorburger, T.V. and Wyant, J.C., Direct comparison of mechanical and optical measurements of the finish of precision machined optical surfaces: Proc. SPIE 508-13 (1985).

Dobosz, M. and E. Ratajczyk, Optical methods of roughness measurement contrast method: Mech Mies Nauk Tech, V.58, No.3, p. 151-153, (March 1985).

Dudderar, T.D., J. A. Gilbert, J. H. Bennewitz and M. A. Taher, Displacement sensitivity In remote-objective-speckle metrology: Experimental Mechanics, V.25, No.4, p. 392-398, (December 1985).

Dusman, F., S. Mahovic, V. Mudronja and R. Stancec, Testing of calibration specimen used with stylus instruments for measuring surface roughness: Strojarstvo, V.28, No.2, p. 67-71, (March-April 1985).

Funabashi, K. and T. Nakamura, Effect of tangential force on the deformation of contacting surface (Part-1) A theoretical analysis of micro-displacement of hard conical rider over a soft metal: Journal of JSLE Int Ed., No.6, p. 57-60, (1985).

Garcia, N., Surface roughness standards, obtained with the scanning tunnelling microscope operated at atmospheric air pressure: Metrologia, V.21, No.3, p. 135-138, (August 1985).

Gourley, D., H. E. Gourley and J. M. Bennett, Evaluation of the microroughness of large flat or curved optics by replication: Thin Solids Films, V.124, No.3-4, p. 277-282, (February 22, 1985).

Halling, J. and K. A. Nuri, Elastic contact of rough surfaces and its Importance in the reduction of wear: Proceedings of the Institution of Mechanical Engineers Part-C, V.I99, No.2, p. 139-144, (1985).

Hamilton, D.K. and H. J. Matthews, Confocal Interference microscope as a surface profilometer: Optik (Stuttgart, V.71, No.1, p. 31-34, (August 1985).

Ichimiya, K. and M. Yokohama, Effects of artificial roughness elements for heat transfer and flow situation on a smooth heated wall in a parallel plate duct ( On the shape of roughness element.): Nippon Kikai Gakkai Ronbunshu B Hen, V.51, No.470, p. 3397-3403, (October 1985).

Johnson, K. L., Contact Mechanics: Cambridge University Press, London (1985).

Kholodilov, N.V., N.K. Myshkin and A. Y. Grigor'ev, Microtopography evaluation with scanning electron microscope: Soviet Journal of Friction Wear, V.6, No.4, p. 133-136, (1985).

Kohno, T., N. Ozawa, K. Miyamoto and T. Musha, Practical non-contact surface measuring Instrument with one nanometre resolution: Precision Engineering, V.7, No.4, p. 231-232, (October 1985).

Kuz'min, N.N., Calculation of friction coefficients with elastoplastic deformation in the real contact zones of rough surfaces: Soviet Journal of Friction and Wear vol.6, no.5 p. 96-101, 1985.

Kuz'min, N. N., Raschyet koeffits ientov treniye pri epregoplasticheskikh deformatsiyakh: Trenie i Iznos 6, 894-901 (1985).

Lai, W.T., Cheng, H.S., Temperature analysis in lubricated simple sliding rough contacts: ASLE Transactions, vol.28, no.3, p. 303-12, July 1985.

Langenbeck, P. and D. Mueller: Smooth, low scatter metal optics by repeatedly machining on a No Growth machine: Precision engineering, V.7, No.4, p. 216-224, (October 1985).

Lukianowicz, C., Analysis of light scattering by rough manufactured surfaces: Prec. Eng., 7, 2, p. 67-71 (April 1985).

Mitsuki, K., N. Ozawa and T. Kohno, Development of a high resolution In-process sensor for surface roughness by laser beam: Bulletin of the Japan Society of Precision Engineering, V.19, No.2, p. 142-143, (June 1985).

Mori, M., H. Kumehara, H. Suda and K. Takahashi, Variation of machined surface-roughness with progressing of tool wear: Bulletin of Japan Society of Precision Engineering, V.19, No.3, p. 216-217, (September 1985).

Morov, V.A. and 1. N. Cherskii, Thermoelastic instability of friction contact of stamps with the halfspace: Soviet Journal of Friction and Wear, V.6, No.1, p. 18-27, (1985).

Mulvaney, D.J., D. E. Newland and K. F. Gill, Identification of surface roughness: Proceedings of the Institute of Mechanical Engineering Part C, V.199, No.C4, p. 281-286, (1985).

Nowicki, Bogdan, Multiparameter representation of surface roughness: Wear, v.102, No.3, p. 161-167, (April 1, 1985).

Perry, D.M., Moran, P.J. and Robinson, G.M., Three-dimensional surface metrology of magnetic recording materials through direct-phase-detecting microscopic interferometry: J. Instn. Elec. & Radio Engs., 55, 4, p. 145-150 (April 1985).

Plog, H., Status of standardisation In the field of surface treatment Part 1: Galvanotechnik, V.76, No.1, p. 21-26, (January 1985).

Radchik, V.S., Supporting contact of two undulating rough surfaces: Soviet Machine Science, No.4, p. 71-77, (1985).

Rau, N., G. Heubner and W. Staiger, Werkstatt Betr, Optical surface analysis for determining surface Irregularities: V.118, No.II, p. 725-730, (November 1985).

Rudzit, Ye. A., Determining microtopographic roughness parameters from sections: Measurement Technology, V.28, No.11, p. 948-951, (November 1985).

Salamon, N.J., Tong, Xu Xu, and Mahmoud, F.F., Effects of profile, roughness and friction on contacting bodies in compression: Wear, vol.101, no.3, p. 205-18, 1 Feb. 1985.

Schwab, ?, Optical measurement of Surface roughness: Metalloberflaeche, V.39, No.2, p. 51-54, (February 1985).

Sherrington, I., The measurement and characterisation of surface topography: Lancaster, UK, Lancashire Polytechnic, Ph.D. thesis, paging unknown, (1985).

Sivridenok, A., S. A. Chizhik and M.I. Petrokevets, Statistical model of elastic contact with account for subroughness: Soviet Journal of Friction and Wear, V.6, No.6, p. 13-18, (1985).

Sviridenok, A., T. V. Korochkina, M.I. Petrokovets and S. A. Chizhik, On the real contact area of rough spheres: Soviet Journal of Friction Wear., V.6, No.I, p. 13-17, (1985).

Tangena, A.G., Wijnhoven, P.J.M., Finite element calculations on the influence of surface roughness on friction: Wear, vol.103, no.4, p. 345-54, 15 June 1985.

Thurn, G.W. and T. Gast, Roughness measurements by light scattering techniques: Tech Mess TM, V.52, No.2, p. 74-78, (February 1985).

Wehbi, D., Monteil, G. and Roques-Carmes, C., Notions de rucosite de surface et methodes de mesure: Le vide, les couches minces, 224, 107, (1985).

Wenyi, M., Bao Xuecheng, Chen Yatseng. and Zhaung Songlin, Theoretical analysis of the relationship between contrast of laser speckle pattern and surface roughness: Guangxue Xuebao, V.5, No.3, p. 724-729, (August 1985).

Whitehouse, D.J., Assessment of surface finish profiles produced by multi-process manufacture: Proc. Instn. Mech. Engrs., 199, B4, p. 263-270 (1985).

Whitehouse, D.J. and Phillips, M.J., Sampling in a two-dimensional plane: J. Phys. A, Math. Gen., 18, p. 2465-2477 (1985).

Wyant, J.C., Optical profilers for surface roughness: Proc. Soc. Photo-Optical Instr. Engineers, no. 575, p. 174-180, 1985.

Yamamoto, Y. and M. Hashimoto, Changes of surface properties In rolling/sliding contact during running-in process: Journal of JSLE International Ed, No.6, p. 125-130, (1985).

Yueming, Z., Wang Ce and Ung Dehong, Determination of surface roughness by correlation of laser speckle In real time: Guangxue Xuebao, V.5, No.3, p. 248-251, (March 1985).

## 1986

Anon: Papers presented at the third international conference on metrology and properties of engineering surfaces: Wear, V.109, No.1-4, 420 p. , (May-June 1986).

Baglin, K.P., Micro-elastohydrodynamic lubrication and its relationship with running-in: IMechE, 200, C6, p. 415-424 (1986).

Barna, P.B., L. Gosztola, A. Zalar and M. Rasigni, Direct TEM study of the roughening of SiO2/5i Interface induced during AES depth profiling: Surface Interface Analysis, V.9, No.1-6, p. 328, (July 1986).

Baro, A.M., N. Garcia and R. Miranda, Operation of scanning tunneling microscopy at air ambient pressure to study technologically relevant materials: Surface Iinterface Analysis, V.9, No.1-6, p. 136, (July 1986).

Bengtsson, A. and A. Ronberg, Absolute measurement of running-in: Wear, V.109, No.1-4, p. 329-342, (May-June 1986).

Bengtsson, A. and A. Ronnberg, Obtaining the topographical Image of a surface with the aid of a profilograph: Soviet Journal of Friction and Wear, V.7, No.1, p. 19-25, (1986).

Binnig, G., Rohrer, H., Scanning tunnel microscopy: IBM Journal of Research and Development vol.30, no.4 p. 355-69, July 1986.

Bogy, D.B., Bouchard, G., Chang, W.-R. and Talke, F.E., Use of the laser doppler vibrometer to measure the surface topography of magnetic disks: Wear, 107, p. 227-244 (1986).

Brodmann, R., Roughness form and waviness measurement by means of light-scattering: Precision Engineering, V.8, No.4, p. 221-226, (October1986).

Brodmann, R. and G. Thurn: Roughness measurement of ground, turned and shot-peened surfaces by the light scattering method: Wear, V.109, No.1-4, p. 1-13, (May-June 1986).

Brodmann, R., H. Paisdzior, H. Rau and G. Huebner, Optical measurement of the roughness and waviness of finish-machined surfaces: Werkstatt, V.119, No.1, p. 849-852, (October 1986).

Buonopane, R.A., E. B. Gutott and M. M. T. Rimore, Effect of changing tape surface properties on air entrainment velocity: AIChE Journal, V.32, No.4, p. 682-683, (April 1986).

Bush, A.W., Predicting the behaviour of lubricated bearings from surface measurements: Wear, V.109, No.1-4, p. 315-327, (May-June 1986).

Chepovetskii, I.Kh., Levitas, V.I., Yushchenko, S.A., Study of plastic deformation of a single rough surface microasperity: Soviet Journal of Friction and Wear vol.7, no.5 p. 57-64, 1986.

Chiang, S., Wilson, R.J., Scanning tunneling microscopy: Examining the Submicron World. Proceedings of a NATO Advanced Study Institute, p. 1-19, Editor(s), Feder, R., McGowan, J.W., Shinozaki, D.M., Plenum, New York, 1986.

Clarke, K.C., Computation of the fractal dimension of topographic surfaces using the triangular prism surface area method: Computers and Geosciences, V.12, No.5?, p. 71 2-722, (1986).

Cole, M.W., Holter, N.S., Pfeifer, P., Henry's law of adsorption on a fractal surface: Physical Review B (Condensed Matter), vol.33, no.12, pt.2 p. 8806-9, 15 June 1986.

Dey, S., S. K. Chakkaborty and M. Chakraborty, Dynamic response of normal moving load In an Initially stressed transversely Isotropic half-space: International Journal of Solids and Structures., V.22, No.3, p. 283-291, ( 1986).

Dragoset, R. A., Young, R.D., Layer, H. P., Mielczarek, S. R., Teague, E. C., and Celotta, R. J.(1986), Scanning tunneling microscopy applied to optical surfaces: Reprinted from Optics Letters 11560-562.

Elewa, K., Importance of checking the stylus radius In the measurement of surface roughness: Wear, V.109, No.1-4, p. 401-410, (May-June 1986).

Family, Fereydoon, Scaling of rough surfaces—effects of surface diffusion: Journal of Physics A, Math. & General, v. 19, no. 8, p. L441-L446, (1986).

Gagnepain, J.J. and C. Roques-Carmes, Fractal approach to two-dimensional and three-dimensional surface roughness: Wear, V.109, No.1-4, p. 119-126, (May-June 1986).

Generazio, E.R. and D. J. Roth, Quantitative flaw characterization with laser acoustic Microscopy: Material Evaluation, V.44, No.7, p. 863-870, (June 1986).

Gimzewski, J.K., Humbert, A., Scanning tunneling microscopy of surface microstructure on rough surfaces: IBM Journal of Research and Development vol.30, no.5 p. 472-7., Sept. 1986.

Gitis, N.V. and A. S. Lapidus, Statistical model of elastic Optimization of roughness on sliding motion guideways: Soviet Engineering Research, V.5, No.11, p. 73-74, (November 1986).

Grabe, M. and H. Cordes, Measurement of the rms slope of rough surfaces: Tech Mess TM, V.53, No.1, p. 40-42, (January 1986).

Griffiths, B.J., Problems In measuring the topography of machined surfaces produced by plastic deformation mechanisms: Wear, V.109, No.1-4, p. 195-205, (May-June 1986).

Haizuka, S., C. Naruse, R. Nemoto and M. Togo, Influences of surface roughness and viscosity of lubricating oils upon limiting load for scoring of spur gears: Nippon Kikai Gakkai Ronbunshu C. Hen, V.52, No.483, p. 2906-2913, (November 1986).

Halling, J., Tribology of surface coatings, particularly ceramics: Proceedings of the Institute of Mechanical Engineering Part C, V.200, No.C1, p. 31-40, (1986).

Havenith, T., D. Rebenstirff and R. Weissmann, Determination of surface corrugation and thickness variation of flexible plates: Tech Mess TM, V.53, No.10, p. 381-383, (1986).

Hisakado, T., Contact mechanism between sliding surfaces (1 st report)-Effects of probability density of surface heights and shapes of asperities: Journal of JSLE Int Ed, No.6, p. 51-56, (1986).

Hisakado, T., Contact mechanism between sliding surfaces (4th report) theoretical analysis of counterface roughness effect on the friction and wear of polymers: Journal of JSLE Int Ed, No.7, p. 23-28, (1986).

Hoyashita, S., Ishibashi, A., Statistical analysis of roughness on contact surfaces: Reports of the Faculty of Science and Engineering, Saga University, vol.15, no.1, p. 51-9, July 1986.

Jordan, D.L., R. C. Hollins and E. Jakeman, Measurement and characterization of multiscale surfaces: Wear, V.109, No.1-4, p. 127-134, (May-June 1986).

Kagami, J., Yamada, K., Hatazawa, T., Contact width and compliance between cylinders and rough plates: Wear, vol.113, no.3, p. 353-70, 31 Dec. 1986.

Kang, S.C. and K. C. Ludema, Breaking-in of lubricated surfaces: Wear, V.108, No.4, p. 375-384, (April 15, 1986).

Kato, S., E. Marui, and K. Tachi, Frictional properties of 9 surface covered with soft metal surface film ( 2nd report, surface topography and frictional properties: Nippon Kikai Gakkai Ronbunshu C Hen, V.52, No.483, p. 2934-2939, (November1986).

Kawai, N., T. Nakamura and Y. Ukai, Surface roughening mechanisms of polycrystalline metal sheet during plastic deformation. (Effect of strain path on surface topography): Bulletin JSME, V.29, No.250, p. 1337-1343, (April 1986).

Kawazoe, Y. and T. Honda, Application of a microcomputer for measurements of two-dimensional surface roughness. (General construction of the system, measuring method and measured examples.): Nippon Kikai Gakkai Ronbunshu C Hen, V.52, No.477, p. 1574-1579, (May 1986).

Krause, H., Ocalan, E., The effect of initial orientation on the formation of tribological textures and on the wear behaviour of the region in the proximity of surface layers under continuous sliding motion in tribological systems: Wear, vol.108, no.4, p. 337-43, 15 April 1986.

Kuneida, H., Hayakawa, T. Hirano, T. Kii, F. Nagase and N.Sato, Roughness measurement of X-Ray mirror surfaces: Japanese Journal of Applied Physics Part 1, V.25, No.9, p. 1292-1299, (September 1986).

Lakhtakia, A., V. K. Varadan and V. V. Varadan, Effect of surface texture on absorption by lossy dielectric slabs: Applied Optics, V.25, No.23, p. 4349-4352, (December 1, 1986).

Lanchon, H. B. Makaya, J. Saint Jean Paulin, E. Kroener and A. Mirgaux, Mathematical study to obtain qualitative effects of roughness in technical problems: Wear, V.109, No.1-4, p. 99-111, (May-June 1986).

Lehmpfuhl, G., Direct electron microscopic Imaging of surface topography by diffraction and phase contrast: Ultramicroscopy, V.19, No.2, p. 135-146, (1986).

Lin, C.C. and H. H. Hopfe, Surface roughness characterization system: Wear, V.109, No.1-4, p. 79-85, (May-June 1986).

Liu, S.H., Kaplan, T., Gray, L.J., AC response of fractal interfaces: Solid State Ionics, Diffusion & Reactions, vol.18-19, pt.1 p. 65-71, Jan. 1986.

Louis, E., Guinea, F., et al., The fractal nature of fracture, *in* Fractal Aspects of Materials: Pittsburgh, PA, Materials Research Society, p. 43-45, (1986).

Makushkin, A.P., Kragel'skii, I.V., Contacting of rough surfaces through a polymer layer: Soviet Journal of Friction and Wearvol.7, no.1p.1-9, 1986.

McCool, J.J, Comparison of models for the contact of rough surfaces: Wear, vol.107, no.1, p. 37-60, 1 Jan. 1986.

Messier, R., and Yehoda, J.E., Morphology of ballistically aggregated surface deposits, *in* Fractal Aspects of Materials: Pittsburgh, Materials Research Society, p. 123-125, (1986).

Miller, A.R. and E. Vegh, Family of curves for the rough surface reflection coefficient: IEE Proceedings. Part H, Microwaves, Antennas and Propagation, V.133, No.6, p. 483-489, (December 1986).

Mitsui. K., In-process sensors for surface roughness and their applications: Precision Engineering, V.8, No.4, p. 212-220, (October 1986).

Mulvaney, D.J., Newland, D.E. and Gill, K.F., A characterisation of surface texture profiles: IMechE, 200, C3, p. 167-178 (1986).

Mulvaney, D.J., D. E. Newland and K. F. Gill, Comparison of orthogonal transforms In their application to surface texture: Proceeding of the /institute of Mechanical Engineering Part C, V.200, No.C6, PP. 407-41 4, (1986).

Newland, D.E., Effect of a footprint on perceived surface roughness: Proceedings of the Royal Society of London Ser A, V.405, No. i829, p. 303-307, (June 9, 1986).

Nicholas, M.G., R. M. Crispin and B. McGurran, Some effect of surface texture on liquid behaviour: Wear, V.109, No.1-4, p. 305-313, (May-June 1986).

Nitta, Shimoda, K. Kato and Y. Shiya, Effects of surface roughness and size on fitting strength of shrink fit between ceramic and metal: Nippon Kikai Gakkai Ronbunshu C Hen, V.52, No.481, p. 2503-2507, (September 1986).

Nowicki, B., Surface roughness and measurement with new contact method: International Journal of Machine Tool Design Research, V.26, No.l, p. 61-68, (1986).

Oehrlein, G.S., R. G. Schad and M. A. Jaso, Mechanism of silicon surface roughening by reactive ion etching: Surface and Interface Ana/ysis, V.8, No.6, p. 243-246, (December 1986).

Parry, A.A., Waterhouse, R.B., Wear scar contour resulting from fretting of a spherical surface against a flat: Wear, vol.111, no.2, p. 237-9, 1 Sept. 1986.

Pechstedt, R. and L. Leine, Effect of a thin transition layer on the dispersion radiation of surface polaritons on a randomly rough surface: Phys Status Solidi B, V.135, No.2, p. 749-758, (June 1986).

Rakels, J.H. and H. T. Hingle: Use of optical diffraction techniques to obtain information about surface finish, tool shape and machine tool condition: Wear, V.109, No.1-4, p. 259-266, (May-June 1986).

Rau, N. and G. Huebner, Optical measurements of chatter marks: Wear, V.109, No.1-4, p. 225-239, (May-June 1986).

Rojanski., uppert., Bale, H.D., Dacai, X., Schmidt, P.W., Farin, D., Seri-Levy, A., Avnir, D., Integrated fractal analysis of silica, adsorption, electronic energy transfer, and small-angle X-ray scattering: Physical Review Letters, vol.56, no.23, p. 2505-8, 9 June 1986.

Sakhnovskii, M.Y. and Y. M. Serbunov: Analysis of the effect of processing on the optical properties of rough-surfaced, adsorbing surface using the Vector-Polarization method: Journal/ of Applied Spectroscopy, V.44, No.3, p. 288-293, (March 1986).

Sakuma, T. and Y. Yamamoto, Attenuation of the surface acoustic soliton by surface roughness: Japanese Journal of Applied Physics Supplement, V.25, No.Suppl 25-1, p. 58-60, (1986).

Salemink, H., Scanning tunneling microscopy: Microelectronic Engineering, vol.5, no.1-4, p. 501-8, Dec. 1986.

Schcavelin, V.M., Shcheglov, A.S., Thermal conductance of elastic contact of rough surfaces in vacuum: Soviet Journal of Friction and Wear vol.7, no.1 p. 117-20, 1986.

Schmidt, K., Optical measurement of surface roughness: Feingeraetetechnik, V.35, No.10, p. 446-447, (1986).

Semenyuk, N.F., Average height of rough surface asperities and density of contact spots In the contacting of a rough surface with a smooth surface: Soviet Journal of Friction and Wear, V.7, No.1, p. 66-70, (1986).

Semenyuk, N.F., Average values of total and mean summit curvatures and heights of asperities of an anisotropic rough surface: Soviet Journal of Friction and Wear, V.7, No.5, p. 47-56, (1986).

Semenyuk, N.F., Summit height probability density and anisotropic rough surface summit characteristics: Trenie i Iznos, 7, 6, p. 1017-1024 (1986).

Shcheglov, A.S. and V. M. Shchavelin, Thermal conductance of the contact of rough surfaces: Soviet Journal of Friction and Wear, V.7, No.3, p. 116-119, (1986).

Sherrington, I., and E. H. Smith, Significance of surface topography in engineering: Precision Engineering, V.8, No.2, p. 79-87, (April 1986).

Shkvar, E.A., Considerations of roughness of a surface over which f low occurs: Journal of Applied Mechanics and Technical Physics, V.27, No.6, p. 840-845, (November-December 1986).

Soom, A., Chen, J.-W., Simulation of random surface roughness-induced contact vibrations at Hertzian contacts during steady sliding: Transactions of the ASME. Journal of Tribology Technology vol.108, no.1, p. 123-7, Jan. 1986.

Stakhniv, N.E., 0. G. Gutsalenko and A. V. Zaitsev, Replica method of evaluating surface microgeometry: Soviet Journal of Superhard Material/s, V.8, No.2, p. 46-49, (1986).

Surayanarayana, Rao, V. Prthviraj and V. Radhakrishnan, Investigation Into the assessment of surface finish by microwave reflection: Precision Engineering, V.8, No.l, p. 9-12, (January 1986).

Sweeney, F. and T. A. Spedding, Simulation technique to Investigate rough surface scatter: Wear, V.109, No.1-4, p. 43-56, (May-June 1986).

Takeya, N., K. Matsuda, B. Watanabe and T. Eiju, Surface roughness measurement by holographic Interferometry using two refractive Indices: Kikai Gijutsu Kenkyusho Shoho, V.40, No.2, p. 87-93, (March 1986).

Terekhov, V.M. and A. A. Ovseenko, Surface roughness with diamond grinding: Soviet Energy Technology, No.7, p. 59-62, (1986).

Thomas, A. and Thomas, T.R., Experimental measurement of surface roughness on a sub-micron scale: Int. Conf. Modern Prod. & Prod. Metrology, Tech. Univ., Vienna, p. 97.3-111.3 (April 1986a).

Thomas, A.P., and Thomas, T.R., Engineering surfaces as fractals, *in* Fractal Aspects of Materials: Pittsburgh, PA, Materials Research Society, p. 75-77, (1986b).

Tikhomirov, V.P., Gorlenko, O.A., Two-dimensional model of hard-body surface asperities: Soviet Journal of Friction and Wear vol.7, no.3 p. 112-15, 1986.

Tsukada, T. and S. Noguchi, Assessment of surface roughness by specific intensity distribution of reflected light: Bulletin of the Japan Society of Precision Engineering, V.20, No.3, p. 203-204, (September 1986).

Tsukada. Tadao and T. Kanada, Evaluation of two and three-dimensional surface roughness profile and their confidence: Wear, V.109, No.1-4, p. 69-78, (May-June 1986).

Van Vechten, T.C., P. S. Lashmore, C. E. Johnson and J. C. Puippe, Electrochemical measurement of surface area: Plating and surface finishing, V.73, No.13, p. 45-47, (December 1986).

Virdee, M.S., High accuracy form measurement of specularly reflecting surfaces by laser autocollimation: SPIE, 676, Ultraprec. Machining & Autom. Fabric. of Optics, p. 66-73 (1986).

von Stebut, J., Modification of a surface profile's height parameters during strip drawing: Wear, V.109, No.1-4, p. 145-155, (May-June 1986).

Vorburger, T.V., D. E. Giisinn, F. E. Scire, M. J. McLay, C. H. W. Giauque and E. C. Teague, Optical measurement of the roughness- of sinusoidal surfaces: Wear, V.109, No.1-4, p. 15-27, (May-June 1986).

Vorburger, T.V., F. E. Scire, M. J. McLay and D. E. Gilsinn, Surface roughness studies for wind tunnel model- used In high Reynolds Number testing: Journal of Aircraft, V.23, No.1, p. 56-61, (January 1986).

Wambold, J.C. and Henry, J.J., High-speed noncontact profiling of pavement surface texture and its significance: J. Trib., ASME, 108, p. 455-461 (July 1986).

Webster, M.N., Sayles, R.S., A numerical model for the elastic frictionless contact of real rough surfaces: Transactions of the ASME. Journal of Tribology, vol.108, no.3 p. 314-20, July 1986.

Wehbi, D. and C. Roques-Carmes, Physical limitations of optical defocussing technique: Wear, V.109, No.1-4, p. 287-295, (May-June 1986).

Wehbi, D., Clerc, M.A. and Roques-Carmes, C., Three-dimensional quantification of wear tracks on amorphous NiB coatings: Wear, 107, p. 263-278 (1986).

Wong, P., Howard, J., Lin, J.-S., Surface roughening and the fractal nature of rocks: Physical Review Letters, vol.57, no.5, p. 637-40, 4 Aug. 1986.

Wyant, J.C., C. L. Koliopoulos, B. Bhushan, and D. Baslia, Development of a three-dimensional noncontact digital optical profiler: Journal of Tribology, Transactions ASME, V.108, No.1, p. 1-8, (January 1986).

Yanagi, K., T. Maeda and T. Tsukada, Practical method of optical measurement for the minute surface roughness of cylindrical machined parts: Wear, V.109, No.1-4, p. 57-67, (May-June 1986).

Zaporozhets, V.V., Gordeev, S.V., Statistical characteristics of elementary rolling friction processes. II. Influence of surface roughness and elastic hysteresis on rolling friction characteristics: Soviet Journal of Friction and Wear, vol.7, no.4, p. 42-7, 1986.

Zaporozhets, V.V., Gordeev, S.V., Statistical characteristics of elementary rolling friction processes. I. Study technique and connection of he rolling friction characteristics with the structure factor: Soviet Journal of Friction and Wear vol.7, no.3 p. 27-32, 1986.

Zipin, R.B., Effect on surface texture of material addition and removal processes: Surface Interface Analysis, V.11, No.6, p. 291-301, (April 1986).

## 1987

Abellan, J., Chicon, R., Ortuno, M., The interpretation and reconstruction of images in scanning tunneling microscopy: Physica Status Solidi A, vol.101, no.2, p. 463-8, 16 June 1987.

Al-Jumaily, G.A., Wilson, S.R., Jungling, K.C., McNeil, J.R. and Bennett, J.M., Frequency response characteristics of a mechanical surface profilometer: Opt. Eng., 26, 9, p. 953-958 (September 1987).

Anon: Roughness measuring Instrument for super-smooth surface by laser-light scattering: Kobelco Technology, No.2, p. 64, (August 1987).

Arkanda, M.A.R., M. H. Khan and D. D. James, Forced convection heat transfer from the roughened surfaces: Journal of the Institution of Engineers (India), Part ?? ME, V.68, No.Part 1-2, p. 30-34, (July-September 1987).

Bahar, E. and M. A. Fitzwater, Full-wave theory and controlled optical experiments for enhanced scattering and depolarization by random rough surfaces: Optics Communication, V.63, No.6, p. 355-360, (September 15, 1987).

Barash, V.Y., Estimating profilometer errors In measuring roughness parameter: Measurement Techniques, V.30, No.2, p. 128-132, (February 1987).

Behm, R.J., Scanning tunneling microscopy as a means for surface characterization: Scanning Microscopy suppl., no.1 p. 61-5 1987.

Bello, D.O. and Walton, S., Surface topography and lubrication in sheet-metal forming: Trib. Int., 20, 2, p. 59-65 (April 1987).

BSI, Surface roughness Terms, Part 1, Surface and its Parameters: London, British Standards Institution, British standard BS 6741. 1987.

Carim, A,. and R. Sinclair, The evolution of Si/SiO2 interface roughness: Journal of the Electrochemical Society, V.134, No.3, p. 741-746, (March 1987).

Chang, W.R., Etsion, I., Bogy, D.B., An elastic-plastic model for the contact of rough surfaces: Transactions of the ASME. Journal of Tribology, vol.109, no.2 p. 257-263, April 1987.

Chizhik, S.A., On the roughness criterion In evaluating hertzian contact characteristics: Soviet Journal of Friction and Wear, V.8, No.4, p. 119-122, (1987).

Chuard, M., J. Mignot, P. Nardin and D. J. Rondot, Range expansion and automation of a classical profilometer: Manufacturing System, V.6, No.3, p. 223-231, (1987).

Collins, R.W. and J. M. Cavese: Surface roughness evolution on glow discharge a-Si,H: Journal of Applied Physics, V.61, No.4, p. 1662-1664, (February 18, 1987).

Correi, F.D., C. D. Ferguson and R. A. Kant, Optical measurement of the rms roughness of ion-implanted surfaces: Nuclear Instruments and Methods in Physics Research Section B, V.B24-25, No.1, p. 581-583, (April 3, 1987).

De Billy, M., G. Quentin and E. Baron, Attenuation measurements of an ultrasonic Rayleigh wave propagating along rough surfaces: Journal of Applied Physics, V.61, No.6, p. 2140-2145, (March 15, 1987).

De Chiffre, L. and H. S. Neilsen, Digital system for surface roughness analysis of plane and cylindrical parts: Precision Engineering, V.9, No.2, p. 59-64, (April 1987).

Dragoset, R. A. and Vorburger, T. V., Scanning tunneling microscopy (STM) of a diamond-turned surface and a grating replica: SPIE, v. 749, p. 54-58.

Drews, W.E., Surface measurement, An advancing technology: Quality Progress, V.20, No.4, p. 43-46, (April 1987).

Dubuc, B., Roques-Carmes, C., Tricot, C. and Zucker, S.W., The variation method, a technique to estimate the fractal dimension of surfaces: Visual Comm. & Image, SPIE, 845, 241 (1987).

Endo, M. and S. Yamamoto, Random response of a material particle pressed on the outer radius of a rotating ring with surface roughness: Nippon Kiai Gakkai Fonbunshu C. Hen, V.53, No.490, p. 1153-1159, (June 1987).

Evans, C.R., and K. L. Johnson, Influence of surface roughness on elastohydrodynamic traction: Proceedings of the Institute of Mechanical Engineering Part C., V.201, No.2, p. 145-150, (1987).

Fabre, F., D. Gorse, J. Lapujoulade and B. Salanon, Experimental study of the roughening transition on a stepped -surface: Cu (115).Europhysics Letters, ~1.3, No.6, p. 737-743, (March 159 1987).

Fainman, Y., J. Shanir and D. Peri, Polarization properties of operable pattern scattered from rough conductors: Journal of the Optical Society of America. A. Optics and Image Science., V.4, No.12, p. 2205-2212, (December 1987).

Ferrante, J., Tribology theory versus-experiment: NASA Technical Memorandum, No.100198, p22p., (1987).

Frankenthal, S., The reflection of radiation from randomly Irregular surfaces: Journal of Acoustical Society of America, V.81, No.5, p. 1377-1384, (May 1987).

Gans, R.F., On random Reynolds roughness: Journal of Tribology, V.109, No.3, p. 427-431, (July 1987).

Hogrefe, H. and C. Kunz: Soft x-ray scattering from rough surfaces,experimental and theoretical analysis: Applied Optics, V.26, No.14, p. 2851-2859, (July 1 5, 1987).

Ichimiya, K., Effects of several roughness elements on an Insulated wall for heat transfer from the opposite smooth heated surface in a parallel plate duct: Journal of Heat Transfer, V.109, No.1, p. 68-73, (February 1987).

Ishizuka, S., K. Kinogiri and H. Yamazaki, Effect on surface - roughness on friction coefficient (Report 1): Journal of Japan Society of Lubrication Engineers, V.32, No.6, p. 441-451, (1987).

Ivanzov, Y. and N. V. Nosov, Influence of surface waviness and roughness parameters on friction and wear: Soviet Journal of Friction and Wear, V.8, No.4, p. 128-131, (1987).

Jacobson, S., P. Wallen and S. Hogmark: Correlation between groove size, wear rate and topography of abraded surface: Wear, V.115, NoO1-2, p. 83-93, (March 1987).

Jelski, D.A. and T. F. George: The plasmon dispersion relation on a rough surface, A simple approximation: The Journal of Physical Chemistry, V.91, No.14, p. 3779-3782, (July 2, 1987).

Jeng, Y. and B. J. Hamrock, The effect of surface roughness on elastohydrodynamically lubricated point contact: ASLE Transaction, V.30, No.4, p. 531-538, (October 1987).

Jorne, J., Y. Lii and K. E. Yee, Suppression of dendrite and roughness during electrodeposition by Impinging flow: Journal of the Electrochemical Society, V.134, No.6, p. 1399-1402, (June 1987).

Kachoyan, B.J. and Macaskill, C., Acoustic scattering from an arbitrarily rough surface: J. Acoust. Soc. Am., v. 82, no. 5, p. 1720-1726 (November 1987).

Kadono, H., T. Asakura and N. Takai, Roughness and correlation-length determination of rough-surface objects using the speckle contrast: Applied Physics B, V.44, No.3, p. 167-173 (November 1987).

Kanai, H., M. Abe and K. Kido, Estimation of the surface roughness on the race of bails of ball bearings of vibration analysis: Journal of Vibration, Acoustics, Stress, and Reliability in Design, V.109, No.1, p. 60-68, (Jan 1987).

Karami, G., H. P. Evans and R. W. Snidle, Elastohydrodynamic lubrication of circumferentially finished rollers having sinusoidal roughness: Proceedings of the Institution of Mechanical Engineers. Part C, Mechanical Engineering Science, V.201, No.C1, p. 29-36, (1987).

Kato, S., E. Marui, and K. Tachi, Frictional properties of a surface covered with soft metal surface film ( Surface topography and frictional properties.): Journal/ of Tribology, Transactions of ASME, V.109, No.3, p. 545-551, (July 1987).

Kossakowska-Kiesel, Z., Basic parameter of surface roughness of quartz plates applied to piezoelectric resonators: Elektronika, V.28, No.5, p. 3-8, (1987).

Kowbel, W., Brower, W.E., Jr., Simulation of a metallic glass surface via ab initio calculations: Journal of Non-Crystalline Solids, vol.94, no.1, p. 70-87 Oct 1987.

Lamb, A.D., Some aspects of the character of machined surfaces: Metals & Materials, p. 138-142 (March 1987).

Lau, Y.Y., Effects of cathode surface roughness on the quality of electron beams: Journal of Applied Physics, V.61, No.1, p. 36-44, (January 1, 1987).

Leonhardt, K., Rippert and H. J. Tiziani, Optical microprofilometry and roughness measurement: Tech Mess (TM), V.54, No.6, p. 243-252. (June 1987).

Li, J. and T.Ma, Scattering of silicon Inversion layer electrons by metal/oxide Interface roughness: Journal of Applied Physics, V.62, No.10, p. 4212-4215, (November 15, 1987).

Ling, F.F., Scaling law for contoured length of engineering surfaces: Journal of Applied Physics, vol.62, no.6, p. 2570-2, 15 Sept. 1987.

Makanjoula, P.A. and D. R. Gabe: Mass transfer of rough surfaces, Reconsideration of data reported by Sedahmed et al: Journal of Applied Electrochemistry, V.17, No.2, p. 434-436, (May 1987).

Maolic, H., J. A. Fitzpatrick and A. A. Torrance, Correlation of the characteristics of rough surfaces with their friction coefficients: Proceedings of the Institute of Mechanical Engineering Part C., V.201, No.C5, p. 321-329, (1987).

Marui, E., S. Kato, T. Matsubayashi, A. Kobayashi, S. Senda and M. Ozawa, On the squeeze effect of lubricant between two rough surfaces: Journal of Tribology, V.109, No.4, p. 696-7~3, (October 1987).

McCool, J.I., Relating profile instrument measurements to the functional performance of rough surfaces: Transactions of the ASME. Journal of Tribology, vol.109, no.2 p. 264-70 April 1987.

McGuan, A.C. and A. A. Maradudin, Localization effects In the elastic scattering of light from the randomly rough surface: Journal of the Optical Society of America. B. Optical Physics, V.4, No.6, p. 910-926, (June 1987).

Meakin, P., Fractal scaling in thin film condensation and material surfaces: Crit. Rev. Solid State, v. 13, p. 143-189 (1987).

Meecham, W.C. and W. Lin, Radiation reflected from random rough surfaces: IEEE Journal of Oceanic Engineering, V.OE-12, No.2, p. 357-361, (April 1987).

Miller, A.R. and E. Vegh, Comparison of the rough surface reflection coefficient with Specularly scattered acoustic data: Journal of the Acoustical Society of America, V.82, No.5, p. 1836-1838, (November 1987).

Mo, T. and T. J. Schmugge, Parameterization of the effect of surface roughness on microwave emission: IEEE Transactions on Geoscience and Remote Sensing, V.GE-25, No.4, p. 481-486, (July 1987).

Nagy, P.B. and L. Adler, Surface roughness Induced attenuation of reflected and transmitted ultrasonic waves: Journal/ of the Acoustical Society of America, V.82, No.1, p. 193-197, (July 1987).

Pande, C.S., N. Louat, R. A. Masumura and S. Smith, Fractal characterization of rough surfaces using secondary electrons: Philosophical Magazine Letters, V.55, No.3, p. 99-104, (March 1987).

Power, W.L., Tullis, T.E., Brown, S.R., Boitnott, G.N., and Scholz, Roughness of natural fault surfaces: Geophysical Research Letters, v. 14, no. 1, p. 29-32, (1987).

Rammelt, U. and G. Reinhard, The Influence of surface roughness on the Impedance data for Iron electrodes In acid solutions: Corrosion Science, V.27, No.4, p. 373-382, (1987).

Russ, J.C., and Russ, J.C., Feature-specific measurement of surface roughness in SEM images: Particle Characterization, v. 4, no. 1, p. 22-25, (1987).

Sacks, W., Gauthier, S., Rousset, S., Klein, J., Esrick, M.A., Surface topography in scanning tunneling microscopy, a free-electron model: Physical Review B (Condensed Matter), vol.36, no.2, p. 961-7, 15 July 1987.

Saioner, D., J. A. Martin and M. C. Tringides, Determination of terrace size and edge roughness in vicinal Si100 surfaces by surface-sensitive diffraction: Journal of Applied Physics, V.6t, No.8, p. 2884-2893, (April 15, 1987).

Sato, H. and M. O-Mori, Surface roughness measurement using scanning electron microscope with digital processing: Journal of Engineering for Industry Transactions ASME, V.109, No.2, p. 106-111, (May 1987).

Schiffer, R., Reflectivity of a slightly rough surface: Applied Optics, V.26, p. 704-712, (February 15, 1987).

Seabra, J., Berthe, D., Influence of surface waviness and roughness on the normal pressure distribution in the Hertzian contact: Transactions of the ASME. Journal of Tribology, vol.109, no.3 p. 462-70, July 1987.

Seinov, S.V., V. A. Kalashnikov and B. P. Zheleznov, Capacitive profilometer: Measurement Techniques, V.30, No.2, p. 133-134, (February 1987).

Sherrington, I., and E. H. Smith, Parameters for characterizing the surface topography of engineering components: Proceedings of the Institute of Mechanical Engineering Part C., v. 201, No.4, p. 297-306, (1987).

Shiraishi, M., Consideration of surface roughness measurement by optical method: Journal of Engineering for Industry Transactions ASME, V.109, No.2, p. 100-105, (May 1987).

Sinha, P., J. S. Kennedy and C. M. Rodkiewicz: Effects of surface roughness-and additives in lubrication, generalised Reynolds equation and Its application to elastohydrodynamic film: Proceeding of the Institute of Mechanical Engineers. Part C, Mechanical Engineering Science, V.201, No.C1, p. 1-9, (1987).

Smit, Z., Surface roughness correction In thick target PIXE analysis: Nuclear Instrument & Methods in Physic Research

Section B, V.B28, No.4, p. 567-570, (November 1, 1987).

Smith, R., S.J. Wilde, G. Carter, 1. V. Katardjiev and M. J. Nobes, Surface topography evolution resulting from reactive etching and co-deposition processes: Nuclear Instruments and Methods in Physics Research Section B, V.B18, No.4-6, p. 533-537, (February 2, 1987).

Smythe, R.A., Heterodyne profiler moves R & D to the market place-: Laser Focus (Littlelon, Massachusetts), V.23, No.7, p. 92-95, (July 1987).

Stedman, M., Basis for comparing the performance of surface-measuring machines: Prec. Eng., 9, 3, p. 149-152 (July 1987).

Tonder, K., Effects of skew unidirectional striated roughness on hydrodynamic lubrication. Part 2- Moving roughness: Journal of Tribology, V.109, No.4, p. 671-678, (October1987).

Toth, L., A mode of substrate surface roughness effect on the electrical properties of thin film: Vacuum, V.37, No.1-2, p. 103-106, (1987).

Tsukada, T., Trend of surface texture measurements and Its assessment: Journal of Japan Society of Lubrication Engineering, V.32, No.12, p. 839-844, (1987).

Türk, N., Greig, M.J., Dearman, W.R., and Amin, F.F., Characterization of rock joint surfaces by fractal dimension, *in* U.S. Symposium on Rock Mechanics, 28th, Tucson, AZ, June 29-July 1: Proceedings, p. 1223-1236, (1987).

Valdes, J., Lobbe, E., Porfiri, M., Spectrum analysis of surface roughness signals obtained with the scanning tunneling microscope: Surface Science, vol.181, no.1-2, p. 262-9, March 1987.

Varsanyi, G., G. Mink, K. Ree and M. Mohai, Consideration of two dimensional surface roughnesses in quantitative XPS analysis: Periodica Polytechnica, Chemical Engineering, V.31, No.1-2, p. 3-17, ( 1987).

Villian, J., Healing of a rough surface at low temperature: Europhysics Letters, V.2, No.7, p. 531-537, (October 1, 1987).

Wang, L. and J. Zhao, Influence of surface roughness In turning with the ultrasonic vibration tool: International Journal of Machine Tools and Manufacture, V.27, No.2, p. 181-190, (1987).

Wang, S. and K. B. Hsu, Chung-Kuo Chi Hsueh Kung Cheng Hsueh Pao, Study of pneumatic gauge to surface roughness measurement: V.8, No.5, p. 347-363, (October 1987).

Warkusz, F., Some transport properties of granular metal films with rough surfaces: Vacuum, V.37, No.1-2, p. 115-118, (1987).

White, J.W. and P. E. Raad: Effect of a rough translating surface on gas film lubrication, a numerical and analytical study: Journal of Tribology, V.109, No.2, p. 271-275, (April 1987).

Whitley, J.Q., R. P. Kusy, M. J. Mayhew and J. E. Buckthal, Surface roughness of stainless steel and electroformed nickel standards using a HeNe laser: Optics and Laser Technology, V.19, No.4, pp. 189-196, (August 1987).

Yanagi, K. and M. Nakamura, Indirect optical measuring method of surface roughness on Internal ground surface: Bulletin of the Japan Society of Precision Engineering, V.21, No.3, p. 217-217, (September 1987).

Yasumi, T., Y. Shimoyana, T. Ohnishi, T. Arizuki, T. Yanagimoto and A. Tarao, Development of on-line surface roughness measurement for bright-finished cold-rolled steel strip: Transaction Iron Steel Institute of Japan, V.27, No.3, p. B.75, (1987).

Zalar, A and S. Hofmann, Depth resolution of multilayer Cr/Ni thin film thickness structures deposited on substrates with different roughness: Vacuum, V.37, No.1-2, p. 169-173, ( 1987).

Zdaniewski, W.A. and J. P. Maher, Effect of surface roughness on dielectric strength of thick film dielectrics: American Ceramic Society Bulletin, V.66, p. 1270-1272, (August 1987).

Zilling, F.and F& M Feinwerktech, Topographical representation of surface: Messtech, V.95, No.6, p. 408-409, (September-October 1987).

Zipin, R.B., The space within a profile: Surface and Interface Analysis, vol.10, no.2-3, p. 97-104, March 1987.

## 1988

Adamchuk, V.K., Aleksandrov, V.M., Ermakov, A.V., and Lyubinetskii, I.V., Examination of optical surfaces with a scanning tunneling microscope: Soviet Technical Physics Letters, vol.14, no.2p.114-15 Feb. 1988.

Aktsipetrov, O.A., Vasil'ev, S.I., Panov, V.I., Nonlinear-opticsmethod for studying roughness in connection with scanning tunneling microscopy of surfaces: Soviet Technical Physics Letters, vol.14, no.2, p. 147-9 Feb. 1988.

Albano, E.V., Martin, H.O., Study of recombination reactions of particles adsorbed on fractal and multifractal substrata: Applied Physics A (Solids and Surfaces) vol.A47, no.4 p. 399-407, Dec. 1988.

Al-Khatib, R.F., Glasspoole, W.F. and Thomas, T.R., Direct cylinder bore surface measurement during engine operation: Experimental Methods in Engine Research & Development, p. 59-66, IMechE (1988).

Bahar, E. and M. A. Fitzwater, Enhancement of backscattered diffuse specific Intensities from random distributions of finitely conducting particles with rough surfaces: Journal of the Optical Society of America. A, Optic and Image Science, V.5, No.1, p. 89-98, (January 1988).

Bahar, E. and M. A. Fitzwater, Full-wave copolarlized nonspecular transmission and reflection scattering matrix elements for rough surfaces: Journal of Optical Society of America. A, Optics and Image Science, V.5, No.11, p. 1873-1882, (November 1988).

Baker, L.R., Areal measurement of topography: Surface Topography, 1, p. 159-165 (1988).

Balachandar, R., Ranganathan, Y. and Ramamurthy, A.S., Evaluation of cavitation damage characteristics using a profilometer: IMechE, 202, C5, p. 341-346 (1988).

Bartolome, A., Garcia, R., Vazquez, L., Baro, A.M., Imaging an optical disc by the combined use of scanning tunnelling microscopy and scanning electron microscopy: Journal of Microscopy, vol.152, pt.1, p. 205-11, Oct. 1988.

Bayada, G. and M. Chambat, New models In the theory of the hydrodynamic lubrication of rough surfaces: Journal of Tribology, V.l 10, No.3, p. 402-407, (July 1988).

Beneath, M., A simple physical model of dry deposition to a rough surface: Atmospheric Environment, V.22, No.12, p. 2701-2705,(1988).

Bennett, M., A simple physical model of dry deposition to a rough surface: Atmos. Environ., 22, 12, p. 2701-2705 (1988).

Berger, J., A new surface roughness standard fabricated using silicon technology: Surface Topography, 1, p. 41-47 (1988).

Bhushan, B., J. C. Wyant and J. Meiling, New three-dimensional non contact digital optical profiler: Wear, V.122, No.3, p. 301-312, (March 15, 1988).

Biegen, J.F. and Smythe, R.A., High-resolution phase-measuring laser interferometric microscope for engineering surface metrology: Surface Topography, 1, p. 287-299 (1988).

Blessing, G.V. and Eitzen, D.G., Surface roughness sensed by ultrasound: Surface Topography, 1, p. 143-158 (1988).

Bristow, T.C., Surface roughness measurements over long scan lengths: Surface Topography, 1, p. 281-285 (1988).

Bruno, P., Dipolar magnetic Surface anisotropy In ferromagnetic thin films with Interfacial roughness: Journal of Applied Physics, V.64, No.6, p. 3153-3156, (September 15, 1988).

BSI, Assessment of Surface Texture, Part 1, Methods and Instrumentation: London, British Standards Institution, British standard BS 1134. 1988.

Bugg, C.D. and King, P.J., Scanning capacitance microscopy: J. Phys. E, Sci. Instrum., 21, p. 147-151 (1988).

Cao, L., Xibeu Gongye Daxue Xuebao, On-line measurement of arithmetical mean slope of Industrial surface using the laser scattered light cone method: V.6, No.4, p. 469-478, (October 1988).

Chang, W.R., Etsion, I., Bogy, D.B., Adhesion model for metallic rough surfaces:

Transactions of the ASME. Journal of Tribology, vol.110, no.1 p. 50-56 Jan. 1988.

Chang, W.R., Etsion, I., and Bogy, D.B., Static friction coefficient mode for metallic rough surfaces: Journal of Tribology, V. 110, No.I, p. 57-63, (January 1988).

Cheng, L., Core-ring-ratio method for surface roughness measurement: J. of Wave-Material Interaction, 3, 4, p. 289-300 (October 1988).

Chengwei, W and Zheng Linqing, A general expression for plasticity index: Wear, vol.121, no.2, p. 161-72 15 Jan. 1988.

Church, E.L., Fractal surface finish: Applied Optics, vol. 27, no.8, p. 1518-1526, 15 April 1988. [US Army Armament Res., Dev., & Eng. Center, Picatinny Arsenal, NJ]

Clearfield, H.M., G. 0. Cote, K. A. Oliver, D. K. Shaffer and J. S. Ahearn, Surface analysis of T1-6A1-4V adhesive bonding system: Surface Interface Analysis, V.11, No.6, p. 347-352, (April 1988).

Davis, E.J., Sullivan, P.J. and Stout, K.J., The application of 3-D topography to engine bore surfaces: Surface Topography 1, p. 63-85 (1988).

Dickson, G.R., Mcllhagger, R. and Miller, P.P., The effects of mould surface finish and processing conditions on the surface characteristics of polymeric injection mouldings: Surface Topography, 1, p. 395-407 (1988).

Dobychin, M.N., Elastic contact of rough cylindrical bodies: Soviet Journal of Friction and Wear, vol.9, no.1, p.1-5 1988.

Eatson, W., and Woods, A., The 3-D representation of engineering surfaces: Surface Topography, v. 1, no. 2, p. 165-182, (1988).

Garbini, J.L., Jorgensen, J.E., Downs, R.A. and Kow, S.P., Fringe-field capacitive profilometry: Surface Topography, 1, p. 131-142 (1988).

Gee, A.E., Green, D and Pain, D., An in-process tool proximity sensor for ultra-fine machining: Surface Topography, 1, p. 385-393 (1988).

Gill, R., Surface finish and roundness error in centreless grinding: Surface Topography, 1, p. 319-331 (1988).

Griffiths, B.J., Manufacturing surface design and monitoring for performance: Surface Topography, 1, p. 333-341 (1988).

Grigor'ev, A.Ya., Myshkin, N.K., Semenyuk, N.F. and Kholodilov, O.V., Evaluating specific surface area by the secondary electron emission method: Trenie i Iznos, 9, 5, p. 793-798 (1988).

Gupta, B.N., L. S. Tanwar and H. Kunzmann, Evaluation of surface roughness by an electro-optical sensor: Optics and Lasers in Engineering, V.8, No.1, p. 59-64, (1988).

Hahn, P.O., Lampet, I., Schnegg, A., Submicron roughness determination at the Si-SiO/sub 2/ interface and correlations to processing steps and electronic properties: SiO/sub 2/ and Its Interfaces, Symposium, p. 247-52, Editor(s), Pantelides, S.T., Lucovsky, G, Mater. Res. Soc, Pittsburgh, PA, 1988.

Halling, J. and K. A. Nuri, The elastic-plastic contact of rough surfaces and Its relevance In the study of wear: Proceedings of the Institute of Mechanical Engineers. Part C, Mechanical Engineering Science., V.202, No.C4, p. 269-274, (1988).

Hisakado, T., Contact mechanism between sliding surfaces (8th report)- effects of size of micro-asperities existent on harder asperities and adsorbed layer on friction and wear: Journal of JSLE, International Edition (Japan Society of Lubrication Engineers.), No.9, p. 23-28, (1988).

Hobbs, C.P. and J. W. McMillan and D. W. Palmer, Effects of surface topography In nuclear microprobe Rutherford backscattering analysis: Nuclear Instruments and Methods in Physics Research Section B, V.B30, No.3, p. 342-348, (March 2, 1988).

Jin, Y., Multiple scattering from randomly rough surface: Journal of Applied Physics, V.63, No.5, p. 1286-1292,(March 1, 1988).

Jordan, D.L., Hollins, R.C., Jakeman, E. and Prewett, A., Visible and infra-red scattering from well-characterised surfaces: Surface Topography, 1, p. 195-204 (1988).

Kagami, J., Hatazawa, T., Yamada, K. and Kawaguchi, T., Three-dimensional observation and measurement of worn surfaces: Surface Topography, 1, p. 49-62 (1988).

Kaiser, W.J., Bell, L.D., Hecht, M.H., Grunthaner, F.J., Scanning tunnelling microscopy characterization of the geometric and electronic structure of hydrogen-terminated silicon surfaces: Journal of Vacuum Science & Technology A (Vacuum, Surfaces, and Films), vol.6, no.2, p. 519-23 March-April 1988.

Kawarada, H.U. and 1. Ohdomari, Characterization of roughness and defects at an SI/S102 Interface formed by lateral solid phase epitaxy using high-resolution electron microscopy: Journal of Applied Physics, V.63, No.8, p. 2641-2644, (April 15, 1988).

Kobayashi., Okayama, S., Komuro, M., Okano, M., Watanabe, S., Homma, A., Measurement of nanometer topography by scanning tunneling microscope: CPEM'88 Digest.1988 Conference on Precision Electromagnetic Measurements, p. 329-30 Editor(s), Suematsu, Y., Publisher, Soc. Instrum. & Control Eng, Tokyo, Japan, 1988.

Komaraiah, M., M. A. Manan, Narashimha Reddy P. and S. Victor, Investigation of surface roughness and accuracy In ultrasonic machining: Precision Engineering, V.10, No.2, p. 59-65, (April 1988).

Korochkina, T.V., Sviridenok, A.I. and Petrokovets, M.I., Statistical method for determining temperature fields in rubbing bodies.1. Stationary problem: Trenie i Iznos, 9, 3, p. 397-402 (1988).

Lange, S.R. and Bhushan, B., Use of two- and three-dimensional noncontact surface profiler for tribology applications: Surface Topography, 1, p. 205-217 (1988).

Lieberman, A.G., Vorburger, T.V., Giaque, C.H.W., Risko, D.G. and Rathbun, K.R., Comparison of capacitance and stylus measurements of surface roughness: Surface Topography, 1, p. 115-130 (1988).

Lubrecht, A.A., W. E. ten Napel and R. Bosma, The influence of longitudinal and transverse roughness on the elastohydrodynamic lubrication of circular contacts: Journal of Tribology, V.110, No.3, p. 421-426, (July 1988).

Lucido, G., Triolo, R., Caponetti, E., Fractal approach in petrology, small-angle neutron scattering experiments with volcanic rocks: Physical Review B (Condensed Matter) vol.38, no.13 p. 9031-4 1 Nov. 1988.

Macaskill, C. and Kachoyan, B.J., Numerical evaluation of the statistics of acoustic scattering from a rough surface: J. Acoust. Soc. Am., 84, 5, p. 1826-1835 (November 1988).

McCool, J.I., Distribution of microcontact area, load, pressure, and flash temperature under the Greenwood-Williamson model: Journal of Tribology, Transactions of the ASME, V. I10, No.I, p. 106-111, (January 1988).

McCool, J.I., Predicting flash temperature at microcontacts: Surface Topography, 1, p. 267-279 (1988).

Myshkin, N.K., N. F. Semenyuk and G. S. Kalda, Determination of contact deformation In flat junctions by the random field method: Wear, V.127, No.1, p. 53-63, (October 1, 1988).

Nakagiri, N., Koga, Y., Miyazaki, Y., Effects of sputtering on the surface of graphite: Journal of Microscopy, vol.152, pt.1, p. 245-50, Oct. 1988.

Nishizawa, O., A review of the recent studies on fractals in rock physics: Geophysical Exploration, vol.41, no.6, p. 409-19, Dec. 1988.

O'Callaghan, P.W., Babus'Haq, R.F., Probert, S.D., Surface-topography assessment, precursor to the prediction of pressed-contact behaviour: Transactions of the Institute of Measurement and Control vol.10, no.4, p. 207-17 July-Sept. 1988.

Ogilvy, J.A., Computer simulation of acoustic wave scattering from rough surfaces: J. Phys. D, Appl. Phys., 21, p. 260-277 (1988).

Osanna, P.H. and Durakbasa, N.M., Comprehensive analysis of workpiece geometry using the co-ordinate measurement technique: Surface Topography, 1, p. 247-253 (1988).

Osintsev, A.V., Ostrovskii, Yu.I., Shchepinov, V.P., Yakovlev, V.V., Determination of a contact surface by the method of speckle photography: Soviet Physics - Technical Physics vol.33, no.7 p. 847-9, July 1988.

Panzer, S. and M. Mueller: Hardening of surfaces with electronic beams. Part II, Experimental results and applications: Haerterei Tech Milt, V.43, No.2, p. 103-111, (March-April 1988).

Postlethwaite, J. and U. Lotz, Mass transfer at erosion-corrosion roughened surfaces: The Canadian Journal of Chemical Engineering, V.66, p. 75-78, (February 1988).

Prasad, B.N. and J. S. Saini, Effect of the artificial roughness on heat transfer and friction factor In a solar air heater: Solar Energy, V.41, No.6, p. 555-560, (1988).

Pryor, T.R., Reynolds, R. and Pastorius, W.D., Sight TM, a whole-field optical technique for determination of surface form deviation: Surface Topography, 1, p. 183-193 (1988).

Puik, E.J. and M. J. van der Wiel, The role of layer growth on Interface roughness In NI-C multilayer x-ray mirrors: Vacuum, V.38, No.8-10, p. 707-709, (1988).

Radcliffe, S.J. and George, A.F., The analysis and presentation of multi-trace data, and some applications in industrial research: Surface Topography, 1, p. 87-99 (1988).

Rasigni, G., M. Rasigni, J. Palmari, C. Dussert and F. Varnier, Statistical parameters for random and pseudorandom rough surfaces: Journal of the Optical Society of America. A, Optic and Image Science, V.5, No.I, p. 99-103, (January 1988).

Roos, A., M. Bergkvist and C. G. Ribbing, Determination of the SiO2/SI Interface roughness by diffuse reflectance measurements: Applied Optics, V.27, No.20, p. 4314-4317, (October 15, 1988).

Roques-Carmes, C., Wehbi, D., Quiniou, J.F. and Tricot, C., Modelling engineering surfaces and evaluating their non-integer dimension for application in material science: Surface Topography, 1, p. 237-245 (1988).

Samuels, B., McCool, J.I., Comment on 'Comparison of models for the contact of rough surfaces' (and reply): Wear, vol.124, no.3, p. 337-41, 15 June 1988.

Sayles, R.S., Wayte, R.C., Tweedale, P.J. and Briscoe, B.J., The design, construction and commissioning of an inexpensive prototype laser optical profilometer: Surface Topography, 1, p. 219-227 (1988).

Scaggs, W.F., R. P. Taylor and H. W. Coleman, Measurement and prediction of rough wall effects on friction factor-Uniform roughness results: Journal of Fluid Engineering, V.110, p. 385-391, (December 1988).

Schaefer, D.W., Hurd, A.J., Glines, A.M., Origin of fractal roughness in synthetic and natural materials: Random Fluctuations and Pattern Growth-Experiments and Models, NATO Advanced Study Institute, Proc., p. 62-7, Stanley, H.E., & Ostrowsky, N., eds., Kluwer, Dordrecht, Neth., 1988.

Schneider, U., Steckroth, A., Rau, N. and Hübner, G., An approach to the evaluation of surface profiles by separating them into functionally different parts: Surface Topography, 1, p. 343-355 (1988).

Scott, P.J., Developments in surface texture measurement: Surface Topography, 1, p. 373-383 (1988).

Sherrington, I., and E. H. Smith: Modern measurement techniques in surface metrology, Part II, Optical instruments: Wear, V. 125, No.3, p. 289-308, (August 1, 1988).

Sherrington, I., and E. H. Smith: Modern measurement techniques In surface metrology, Part I, Stylus Instruments, electron microscopy and non-optical compactors: Wear, V.125, No.3, p. 271-288, (August 1, 1988).

Sherrington, I., and Smith, E.H., Fourier models of the surface topography of engineering components: Surface Topography, 1, p. 167-181 (1988).

Slavik, J. and H. Hoefler, Optical measurement of roughness: F & M Feinwerktech Messtech,.96, No.6, p. 258-262, (June 1988).

Sleath, J.F.A., Transition in oscillatory flow over rough beds: Journal of Waterway, Port, Coastal and Ocean Engineering, V.114, No.1, p. 18-33, (January 1988).

Song, J.F., Random profile precision roughness calibration specimens: Surface Topography, 1, p. 29-40 (1988).

Song, S., Yovanovich, M.M., Relative contact pressure, dependence on surface roughness and Vickers microhardness (heat transfer): Journal of Thermophysics and Heat Transfer vol.2, no.1 p. 43-7p. Jan. 1988.

Stedman, M., Limits of topographic measurement by the scanning tunnelling and atomic force microscopes: J. Microscopy, 152, Pt.3, p. 611-618 (December 1988).

Strode, I. and Goodfellow, S., The effect of electrodischarge machining on the surface integrity and mechanical properties of an alloy steel: Surface Topography, 1, p. 309-318 (1988).

Sullivan, P.J., Davis, E.J., Stout, K.J. and Abyaneh, M.Y., The topographical characteristics of micro-indentations and their relevance to microhardness testing: Surface Topography, 1, p. 101-113 (1988).

Tabenkin, A.N. and Parsons, F.G., Surface analysis for measurement of pigment agglomeration in rubber: Surface Topography, 1, p. 301-308 (1988).

Tanaka, M. and H. Sakaki, Interface roughness of GaAs-AlAs quantum wells grown by molecular-beam epitaxy, Misorientation effects: Journal of Applied Physics, V.64, No.9, p. 4503-4508, (November 1, 1988).

Taylor, R.P., W. F. Scaggs and H. W. Coleman, Measurement and prediction of the effects of nonuniform surface roughness on turbulent flow friction coefficients: Journal of Fluids Engineering, V.110, p. 380-384, (December 1988).

Thomas, A and Thomas, T.R., Digital analysis of very small scale surface roughness: J. Wave-Material Interaction, 3. 4. p. 341-350 (October 1988).

Thomas, T.R. and Thomas, A.P., Fractals and engineering surface roughness: Surface Topography, 1, 1, p. 1-10, (1988).

Tran, P. and V. Celli, Monte-Carlo calculation of backscattering enhancement of a randomly rough grating: Journal of the Optical Society of America. A, Optics and Image Science, V.5, No.10, p. 1635-1637, (October 1988).

Tricot, C., Fractal dimension and spectra: Journal de Chimie Physique et de Physico-Chimie Biologique vol.85, no.3, p. 379-84 March 1988.

Tricot, C., Quiniou, J.F., Wehbi, D., Roques-Carmes, C. and Dubuc, B., Evaluation de la dimension fractale d'un graphe: Revue Phys. Appl., 23, p. 111-124 (February 1988).

van Ruiten, C.J.M., New method for the measurement of wheel/rail roughness: Journal of Sound and Vibration, V.120, No.2, p. 287-295, (January 1988).

Varnier, F., Dussert, C., Rasigni, G., Rasigni, M., Llebaria, A., Defining the fractal nature of thin-film top surfaces from microdensitometer analysis of electron micrographs of surface replicas: Journal of Vacuum Science & Technology A (Vacuum, Surfaces, and Films), ol.6, no.3, pt.2, p. 1627-30 May-June 1988.

Virdee, M.S., Nanometrology of optical flats by laser autocollimation: Surface Topography, 1, p. 415-425 (1988).

Warren, W.E., J. G. Curro and D. E. Amos, On the nature of O-rings in contact with rough surfaces: Journal of Tribology, V.110, No.4, p. 632-637, (October 1988).

Watson, W. and Woods, A., The 3-D representation of engineering surfaces: Surface Topography, 1, p. 11-28 (1988).

Weck, M. and Modemann, K., Surface quality as a function of static and dynamic machine tool behaviour during the cutting process: Surface Topography, 1, p. 255-266 (1988).

Whitehouse, D.J., A revised philosophy of surface measuring systems: Proc. Instn. Mech. Engrs., 202, C3, p. 168-185 (1988).

Whitehouse, D.J., Friction and surface measurement: Surface Topography, 1, p. 229-235 (1988).

Whitehouse, D.J., D. K. Bowen, D. G. Chetwynd and S. T. Davies, Nano-calibration for stylus based surface measurement: Journal of Physics E, Scientific /instruments, V.21, No.1, p. 46-51, (January 1988).

Williams, M.W., Ludema, K.C. and Hildreth, D.M., Mueller matrix ellipsometry of practical surfaces: Surface Topography, 1, p. 357-372 (1988).

Wu, C. and Zheng Linqing, General expression for plasticity index: Wear, V.121, No.2, p. 161-172, (January 15, 1988).

Yang, R., Miller, R., Bryant, P.J., Atomic force profiling by utilizing contact forces: Journal of Applied Physics, vol.63, no.2, p. 570-215 Jan. 1988.

Zhu, Dong, and H. S. Cheng, Effect of surface roughness on the point contact EHL: Journal of Tribology, V.112, No.1, p. 32-37, (January 1988).

## 1989

Agarwal, R.A., M. P. Kumaraswamy and S. K. Basu, Mechanical, A review of surface roughness measurement techniques: Engineering Bulletin, V.12, No.4, p. 116-131, (1989).

Aizenberg, I.A., Moskvina, I.R., Nosenko, S.N., The changes in Si surface roughness and their diagnostics: Applied Surface Science, vol.39, no.1-4, p. 473-8, Oct. 1989.

Aleyhane, N., M. Abbaoui and R. Barchewitz, Extreme UV and x-ray scattering measurement from a rough LIF crystal surface characterized by electron micrograph: Applied Optics, V.28, No.10, p. 1763-1772, (May 15, 1989).

Aspinwall, D.K., Zhao, F.L. and El-Menshawy, M.F., Electrodischarge texturing (EDT) of steel rolls: Surface Topography, 2, p. 123-141 (1989).

Bahar, E. and M. A. Fitzwater: Depolarisation and backscatter enhancement In light scattering from the random rough surfaces, comparison of full-wave theory with experiment: Optical Society of America, V.6, No.1, p. 33-43, (January 1989).

Barkey, D.P., R. H. Miller and C. W. Tobias, Roughness development In metal deposition. 11.Stability Theory: Journal of the Electrochemical Society, V.136, No.8, p. 2207-2214, (August1989).

Barragan, F. de Ling, H. P. Evans and R. W. Snidle: Microelasto-hydrodynamic lubrication of circumferentially finished rollers, the Influence of temperature and roughness: Journal/ of Tribology, V.111, No.4, p. 730-736, (October 1989).

Bayada, G. and J. B. Faure, A double scale analysis approach of the Reynolds roughness comments and application to the journal bearing: Journal of Tribology, V.111, No.2, p. 323-330, (April 1989).

Bennett, J.M., and Mattsson, Lars, Introduction to Surface Roughness and Scattering: Washington, D.C., Optical Society of America, paging unknown, (1989). [source of info. for David Windt's surface characterization software]

Bhushan, B. and K. Tonder: Roughness-induced shear-and-squeeze film effects In magnetic recordings - Part I, Analysis: Journal of Tribology, V.111, No.2, p. 220-227, (April 1989).

Bhushan, B. and K. Tonder: Roughness-induced shear-and-squeeze film effects in magnetic recording - Part II, Applications: Journal of Tribology, V.111, No.2, p. 228-237, (April 1989).

Bhushan, B., Doerner, M.F., Role of mechanical properties and surface texture in the real area of contact of magnetic rigid disks: Transactions of the ASME. Journal of Tribology, vol.111, no.3 p. 452-8, July 1989.

Cebeci, T. and D. A. Egan, Prediction of transition due to isolated roughness: AIM Journal, V.27, No.7, p. 870-875,(1989).

Chesters, S., Wen, H.Y., Lundin, M., Kasper, G., Fractal-based characterization of surface texture: Applied Surface Science, vol.40, no.3, p. 185-92, 1989.

Chrissoulidis, D.P., EM wave scattering from statistically Inhomogeneous and periodic random rough surfaces: IEE Proceedings Part H, V.136, No.3, p. 209-214, (June 1989).

Dubuc, B., Quiniou, J.F., Roques-Carmes, C., Tricot, C. and Zucker, S.W., Evaluating the fractal dimension of profiles: Physical Review A., 39, 3, p. 1500-1512 (February 1989).

Dubuc, B., Zucker, S.W., Tricot, C., Quiniou, J.F., and Wehbi, D., Evaluating the fractal dimension of surfaces: Proceedings of the Royal Society of London, Series A, v. 425, no. 1868, p. 113-127, (1989).

Eftimiu, C., Modified Weiner-Hermite expansion In rough-surface scattering: Journal of Optical Society of America. A, Optics and Image Science, V.6, No.10, p. 1584-1594, (October 1989).

Elings, V., Gurley, J., Measuring surface profiles with the scanning tunnelling microscope: Proceedings of the SPIE - The International Society for Optical Engineering vol.1164 p. 122-7 1989.

Faure-Goers, H. and D. Maystre, Improvement of the Kirchoff approximation for scattering from rough surfaces: Joumal of the Optical Society of America. A. Optics and Image Science, V.6, No.4, p. 532-542,(April 1 1989).

Fournier, D., Boccara, A.C., Heterogeneous media and rough surfaces, a fractal approach for heat diffusion studies: Physica A, vol.157, no.1, p. 587-92 1 May 1989.

Gimzewski, J.K., Scanning tunneling microscopic techniques applied to roughness of silver surfaces: Proceedings of the SPIE - The International Society for Optical Engineering, vol.1009, p. 274-80 1989.

Gomes, M.A.F., Jyh, T.I., Ren, T.I., Rodrigues, I.M., Furtado, C.B.S., Mechanically deformed crumpled surfaces: Journal of Physics D (Applied Physics) vol.22, no.8 p. 1217-21, 14 Aug. 1989.

Gostomel'skii, V.S., Diffusion-dislocation deformation of surface roughnesses upon contact of solid bodies: Metallofizika, vol.11, no.1, p. 55-62, Jan.-Feb. 1989, Ukrainian SSR, USSR Translated in, Physics of Metals, K.

Greengard, C., Large bearing numbers and stationary Reynolds roughness: Journal of Tribology, V.111, No.1, p. 136-141, (January 1989).

Grigor'ev, A. Ya., N. K. Myshkin, and O. V. Kholodilov, Methods of surface microgeometry analysis: Trenie i Iznos, v. 10, no. 1, p. 138-155 (1989).

Grigson, C.W.B., Note on a rational method for approximating the full-scale viscous drag from roughness geometry: Royal Inst. Naval Architects, W1 (1989).

Hashimoto, H. and S. Wada', Theoretlcal approach to turbulent lubrication problems Including surface roughness effects: Journal of Tribology, V.111, No.1, p. 17-22, (January 1989).

Hayward, J., Orford, J.D., and Whalley, W.B., Three implementations of fractal analysis of particle outlines: Computers & Geosciences, vol.15, no.2, p. 199-207, 1989.

Hewson-Browne, R.C., P. C. Kendall and D. A. Mauinney, Roughness scattering Into substrate radiation models of rib waveguides: IEE Proceedings Part J, Optoelectronics, V.136, No.5, p. 281-286, (October 1989).

Hwang, B. and C. R. Houska, Calculation of X-ray intensity from a rough sample based on 8 statistical model: Journal/ of Applied Physics, V.63, No.11, p. 5346-5350, (June 1, 1989).

Hwang, J.H. and F. Ma, On the flow of a thin liquid film over a rough rotating disk: Journal of Applied Physics, V.66, No.1, p. 388-394, (July 1, 1989).

Ji-Yi Lin, Cheng, H.S., An analytical model for dynamic wear: Transactions of the ASME. Journal of Tribology, vol.111, no.3 p. 468-74, July 1989.

Karis, T.E. and V. J. Novotny, Pin-on-disk tribology of thin-film magnetic recording disks: Journal of Applied Physics, V.66, No.6, p. 2706-2711, (1989).

Keller, O. and Sønderkær, P., The principles of scattering of electromagnetic waves from a rough surface studied by the interaction of two light-induced dipoles placed near the surface: J. Phys. D, Appl. Phys., 22, p. 343-347 (1989).

Kertesz, J., Wolf, D.E., Growth of self-affine surfaces: Physica D, vol.38, no.1-3, p. 221-5, Sept. 1989.

Kojima, T., Scattering of Hermite-Gaussian beams from an irregular surface: J. Appl. Phys., 65, 4, p. 1424-1428 (February 1989).

Korochkina, T.V., Sviridenok, A.I. and Petrokovets, M.I., Statistical method for determining temperature fields in rubbing bodies.2. Quasistationary problem: Trenie i Iznos, 10, 3, p. 395-400 (1989).

Kweh, C.C., H. P. Evans and R. W. Snidle, Micro-elastohydrodynamlc lubrication of an elliptical contact with transverse and three-dimensional sinusoidal roughness: Journal/ of Tribology, V.111, No.4, p. 577-584, (October 1989).

Lacey, P., A. A. Torrance and J. A. Fitzpatrick, The relation between the friction of lubricated rough surfaces and apparent normal pressure: Journal of Tribology, V.111, No.2, p. 260-264, (April 1989).

Latka, M., Jezierski, K., Influence of fractal surface roughness on reflectance: Optica

Applicata, vol.19, no.1, p. 113-18, 1989, Poland.

Leonov, V.V., Error estimates from the deviation measurements of surface straightness under real conditions: Surface Topography, 2, p. 337-344 (1989).

Linde, Y.W., Bengtsson, A. and Lodén, M., 'Dry' skin in atopic dermatitis: Acta Derm Verereol (Stokh), 69, p. 315-319 (1989).

Ling, F. F., The possible role of fractal geometry in tribology: Jour. Tribology, ASME Transactions 32, 497-505 (1989).

Litvin, F.L., Zhang, J., Handschuh, R.F. and Coy, J.J., Topology of modified helical gears: Surface Topography, 2, p. 41-58 (1989).

Liu, C., Paul, B., Fully developed sliding of rough surfaces: Transactions of the ASME. Journal of Tribology, vol.111, no.3 p. 445-51, July 1989.

Logan, E. and P. Phataraphruk, Mean flow downstream of two-dimensional roughness elements: Journal of Fluids Engineering, V.111, No.2, p. 149-153, (June 1989).

Mathia, T.G., Brugirard, J.L., Balleydier, M., Duarte, J. and Maurin-Perrier, B., Enamel and hydrocolloide dental replica surfaces, Part 2. New statistical criteria for evaluation of replica fidelity: Surface Topography, 2, p. 173-191 (1989).

Mathia, T.G., Brugirard, J.L., Duarte, J. and Maurin-Perrier, B., Enamel and hydrocolloide dental replica surfaces, Part 1. Statistical characterisation of enamel topography: Surface Topography, 2, p. 157-172 (1989).

McAdams, E.T., Effect of surface topography on the electrode-electrolyte interface impedance.1. The high frequency (f > 1 Hz), small signal, interface impedance - A review: Surface Topography, 2, p. 107-122 (1989).

McAdams, E.T., Effect of surface topography on the electrode-electrolyte interface impedance.2. The low frequency (f < 1 Hz), small signal, interface impedance - A review: Surface Topography, 2, p. 223-232 (1989).

McCoy, J.J., Shadowing by randomly rough surfaces: The Journal of the Acoustical Society of America, V.86, No.4, p. 1523-1529, (October 1989).

McLaughlin, J.A., Maguire, P., Shields, J.A., Anderson, J.McC. and Laverty, S.J., Surface characterisation of thin film tin oxide: Surface Topography, 2, p. 367-377 (1989).

Mecholsky, J.J., Passoja, D.E., Feinberg-Ringel, K.S., Quantitative analysis of brittle fracture surfaces using fractal geometry: Journal of the American Ceramic Society vol.72, no.1 p. 60-65p., Jan. 1989.

Merriman, T. and J. Kannel, Analysis of the role of surface roughness on contact stresses between elastic cylinders with and without soft surface coating: Journal of Tribology, V.111, No.1, p. 87-94, (January 1989).

Mitsuya, Y., T. Ohkuba and H. Ota, Averaged Reynolds equation extended to gas lubrication possessing surface roughness in the slip flow regime, approximate method and confirmation experiments: Journal of Tribology, V.111, No.3, p. 495-503, (July 1989).

Moalic, H., J. A. Fitzpatrick and A.A. Torrance, A spectral approach to the analysis of rough surfaces: Journal of Tribology, V.111, No.2, p. 359-363, (April 1989).

Moyer, C.A., The influence of debris on bearing performance, Chapter II: Soc. of Aut. Engs., Paper 891906 (1989).

Moyer, C.A., Power density development, The role of improved line contact performance: Am. Gear Manufs. Assoc., ISBN, 1-55589-538-7 (November 1989).

Moyer, C.A. and Bahney, L.L., Modifying the lambda ratio to functional line contacts: STLE/ASME Trib. Conf., Florida, October 16-19 1989 (No. 89-TC-5A-1).

Mullins, P. J., O'Connor, C., Brick shear walls. An experimental investigation of the brickwork to concrete interface: Research Report Series - University of Queensland, Department of Civil Engineering no. CE108 Sep 1989. Univ of Queensland, Department of Civil Engineering, Brisbane, 1989 p. 1-46, 1989.

Nakagiri, N., Kaizuka, H., Scanning tunnelling microscopy measurements of carbon deposited on to graphite: Journal of Microscopy, vol.156, pt.3, p. 267-72, Dec. 1989.

Nakajima., oki., oyano, T., Kita, E., Tasaki, A., Fujiwara, S., Surface roughness evaluation of multilayer coated X-ray mirrors by scanning tunneling microscope: Japanese Journal of Applied Physics, Part 2 (Letters) vol.28, no.5, p. L854-7, May 1989.

Nakamura, M., Computer simulation for the roughness and fractal properties of film surfaces: Physical Review B (Condensed Matter), vol.40, no.5, p. 3358-9, 15 Aug. 1989.

Nakamura, M., Fractal dimension for the roughness of a film surface: Physical Review B (Condensed Matter) vol.40, no.4 p. 2549-50, 1 Aug. 1989.

Newman, P.T., Radcliffe, S.J. and Skinner, J., The accuracy of profilometric wear volume measurement on the rough LC1B coated surfaces of an articulating joint: Surface Topography, 2, p. 59-77 (1989).

Norwell, D. and D. A. Hills, Hertzian contact of ground surfaces: Journal of Tribology, V.111, No.1, p. 175-179, (January 1989).

O'Callaghan, P., Babus'Haq, R. and Probert, S., Predictions of contact parameters for thermally-distorted pressed joints: Am. Inst. Aeron. & Astron., 24th Thermophysics Conf., New York, AIAA-89-1659 (June 1989).

O'Callaghan, P.W., Babus'Haq, R.F., Probert, S.D. and Evans, G.N., Three-dimensional surface-topography assessments using a stylus/computer system: Int. J. Comp. Applics. in Tech., 2, 2, p. 101-107 (1989).

Ogilvy, J.A., Model for the ultrasonic inspection of rough defects: Ultrasonics, V.27, p. 69-79, (March 1989).

Ogilvy, J.A. and J. R. Foster: Rough surfaces, Gaussian or exponential statistics?: Journal of Physics. D, Applied Physics, V.22, p. 1243-1251, (1989).

Peltoniemi, J., Kari Lumme, Karri Muinonen and Irvine William M., Scattering of light by stochastically rough particles: Applied Optics, V.28, No.19, p. 4088-4095, (October 1, 1989).

Pfeifer, P., Wu, Y.J., Cole, M.W., Krim, J., Multilayer adsorption on a fractally rough surface: Physical Review Letters, vol.62, no.17, p. 1997-2000, 24 April 1989.

Pidduck, A.J., D. J. Robbins and D. B. Gasson: In situ laser light scattering, relationship to silicon surface topography: Journal of Electrochemical Society, V.136, No.10, p. 3088-3094, (October 1989).

Placencia, J. Sune, E. Farres, N. Barniol and X. Aymerich, On the oxide interface micro-roughness in MOS devices: Vacuum, V.39, No.7-8, p. 771-774, (1989).

Putnam, A., Blackford, B.L., Jericho, M.H., Watanabe, M.O., Surface topography study of gold deposited on mica using scanning tunneling microscopy, effect of mica temperature: Surface Science, vol.217, no.1-2, p. 276-88, July 1989.

Raad, P.E. and J. W. White, Entrance and stationary roughness effects on the load carrying capacity of a wide wedge gas bearing: Journal of Tribology, V.111, No.1, p. 41-48, (January 1989).

Raoof, M. and R. E. Hobbs, Tangential compliance of rough elastic bodies In contact: Journal of Tribology, V.111, No.4, p. 726-729, (October 1989).

Russ, J.Chr., and Russ, J.C., Adjacency measurements in tessellations: Journal of Computer-Assisted Microscopy, v. 1, no. 3, p. 217-247, (1989).

Russ, J.C., and Russ, J.Chr., Topological measurements on skeletonized three-dimensional networks: Journal of Computer-Assisted Microscopy, v. 1, no. 2, p. 131-148, (1989).

Ruzic, D.N., Chiu, H.K., Modelling of particle-surface reflections including surface roughness characterized by fractal geometry: Journal of Nuclear Materials, vol.162-164, p. 904-9, April 1989.

Sadeghi, F. and P. C. Sui, Compressible elastohydrodynamic lubrication of rough surfaces: Journal of Tribology, V.111, No.1, p. 56-62, (January 1989).

Schmid, H.G. and Pflug, L., Automatic recognition of defects by parallel contour analysis using fast Fourier transformation: Surface Topography, 2, p. 7-24 (1989).

Schneir, J., Dagata, J.A., Harary, H.H., Evans, C.J., Melmed, A.J., Elswijk, H.B., Sauvageau, J., Scanning tunneling microscopy of optical surfaces: Proceedings of the SPIE - The International Society for Optical Engineering, vol.1164, p. 112-21 1989.

Schwartz, L.M., Sen, P.N., Linton Johnson, D., Influence of rough surfaces on electrolytic conduction in porous media: Physical Review B (Condensed Matter), vol.40, no.4, p. 2450-8, 1 Aug. 1989.

Scott, P.J., Nonlinear dynamic systems in surface metrology: Surface Topography, 2, p. 345-366 (1989).

Shirayama, M. and Hasegawa, M., Study on quality of belt sanded surfaces, relationship between the optical characteristic roughness and the surface roughness parameters: Surface Topography, 2, p. 25-39 (1989).

Soto-Crespo, J.M. and M. Nieto-Vesperinas, Electromagnetic scattering from very rough random surface and deep reflection gratings: Journal of the Optical Society of America. A, Optics and Image Science, V.6, No.3, p. 367-384, (March 1989).

Soundararajan, V. and Radhakrishnan, V., An investigation on the roundness and side-wall errors in ultrasonic drilling: Surface Topography, 2, p. 233-245 (1989).

Spurgeon, D., Effect of punch surface topography on the deep drawing process: Surface Topography, 2, p. 79-91 (1989).

Stedman, M., Lindsey, K., Limits of surface measurement by stylus instruments: Proceedings of the SPIE - The International Society for Optical Engineering, vol.1009, p. 56-61 1989.

Stout, K.J., and Sullivan, P.J., The analysis of the three-dimensional topography of the grinding process: Annals of the CIRP, v. 38, p. 545-548, 1989.

Sullivan, P.J. and Luo, N., The use of digital techniques for error correction in surface roughness measurement: Surface Topography, 2, p. 143-155 (1989).

Sullivan, P.J., Stout, K.J. and Davis, E.J., The basis for an atlas of machining processes: Surface Topography, 2, p. 263-277 (1989).

Teague, E. C., The National Institute of Standards and Technology molecular measuring machine project, Metrology and precision engineering design: J. Vac. Sci. Technol.B7 (6), p. 1898-1902 (1989).

Thorsos, E. and D. R. Jackson, The validity of the perturbation approximation for rough surfaces scattering using a Gaussian roughness spectrum: The Journal of the Acoustical Society of America, V.86, No.1, p. 261-277, (July 1989).

Toshikata, K., Scattering the Hermite-Gaussian beams from an Irregular surface: Journal of Applied Physics, V.65, No.4, p. 424-428, (February 15, 1989).

Treiber, F., On-line automatic defect detection and surface roughness measurements of steel strip: Iron and Steel Engineer, V.66, No.9, p. 26-33, (September 1989).

Tsuda., Yamada, H., Ishida, F., Miyashita, M., Yamaguchi, M., Wide range STM: Journal of the Japan Society of Precision Engineering vol.55, no.1, p. 146-54, Jan. 1989.

Varnier, F., Mayani, N., Rasigni, G., Surface roughness and fractal nature of thin films of MgF/sub 2/ and Ag/MgF/sub 2/: Journal of Vacuum Science & Technology A (Vacuum, Surfaces, and Films), vol.7, no.3, pt.1, p. 1289-93 May-June 1989.

Varnier, F., N. Mayani and G. Rasigni, Statistical parameters for rough surfaces of thin films of CaF2 and Ag/CaF2: Applied Optics, V.28, No.1, p. 127-134, (January 1, 1989).

Vorburger, T. V. and Raja, J.(1990), Surface finish metrology tutorial.': U.S. Department of Commerce, National Institute of Standards and Technology, NISTIR 89-4088.

Whalley, W.B., Orford, J.D., The use of fractals and pseudofractals in the analysis of two-dimensional outlines, review and further exploration: Computers & Geosciences, vol.15, no.2, p. 185-97, 1989.

Whitenton, E.P. and Deckman, D.E., Measuring matching wear scars on balls and flats: Surface Topography, 2, p. 205-222 (1989).

Wickramasinghe, H.K., Scanned-probe microscopes: Scientific American, v. 261, no. 4, p. 98-105, (1989).

Wilson, I.H., The topography of ion bombarded surfaces: Surface Topography, 2, p. 289-335 (1989).

Woronick, S.C., B. X. Yang and A. Krol, Interfacial roughness In InAs/GaAs heterostructures determined by soft x-ray reflectivity: Journal of Applied Physics, V.66, No.8, p. 3566-3573, (October 15, 1989).

Zhang, P., Barad, H., Martinez, A., Fractal-based pattern recognition and its applications to cell image analysis: Proceedings of the SPIE - The International Society for Optical Engineering, vol.1199, pt.2, p. 896-902 pt.2, 1989.

Zhao, Y.W. and Webster, J., An in-process roughness measuring system for adaptive control of plunge grinding: Surface Topography, 2, p. 247-261 (1989).

## 1990

Babus'Haq, R.F., Probert, D., Snaith, B., O'Callaghan, P.W. and George, H.E., Perceived and real roughness variations across machined surfaces: Int. J. Mats. & Prod. Tech., 5, 1, p. 12-24 (1990).

Belyi,.A., yshkin,.K., Petrokovets, M.I., Sviridenko, A.I., Chizhik, S.A., The influence of the solid-contact surface characteristics on its electrical conductivity: Physics, Chemistry and Mechanics of Surfaces, vol.5, no.6 p. 1500-13, 1990.

Benabdallah, S.M., Lapierre, J., A new device for measuring the real area of contact of polymeric material by the perturbation of total internal reflection: Journal of Materials Science, vol.25, no.8, p. 3497-500, Aug. 1990.

Bhushan, Bharat, Tribology and Mechanics of Magnetic Storage Devices: New York, Springer, (1990).

Castano, V.M., Martinez, G., Aleman, J.L., Jimenez, A., Fractal structure of the pore surface of hydrated Portland cement pastes: Journal of Materials Science Letters, vol.9, no.9, p. 1115-16, Sept. 1990.

Chesters, S., Wang, H. C., Kasper, G., Fractal-based method for describing surface roughness and texture: Proceedings, Annual Technical Meeting - Institute of Environmental Sciences, Mount Prospect, IL, p. 316-319, 1990.

Dai, Y.Z., Chiang, F.P., Estimation of plastic strain by fractal: Proceedings of the SPIE - The International Society for Optical Engineering, vol.1332, pt.2, p. 767-74 1990.

Davis, E.J., Stout, K.J., and Sullivan, P.J., The scope of three-dimensional surface topography: Industrial Metrology, v. 1, p. 193-216, (1990).

Demkin, N.B., Study of the contact of two rough surfaces: Soviet Journal of Friction and Wear vol.11, no.6 p. 34-8, 1990.

Denley, D.R., Scanning tunnelling microscopy of rough surfaces: Journal of Vacuum Science & Technology A (Vacuum, Surfaces, and Films), vol. 8, no.1, p. 603-7 Jan.-Feb. 1990.

Denley, D.R., Practical applications of scanning tunneling microscopy: Ultramicroscopy, vol.33, no.2, p. 83-92, Aug. 1990.

Dharmaratne, P.G.R., Shear behaviour of physical models of rock joints under restricted dilation conditions: Engineer v. 18 no. 3 Sep 1990. p. 81, 1990.

DIN, Measurement of surface roughness; Parameters $R_k$, $R_{pk}$, $R_{vk}$, $M_{r1}$, $M_{r2}$ for the description of the material portion in the roughness: Berlin, Deutsches Institut für Normung, German standard DIN 4776. 1990.

Feijóo, Diego, Bauer, Bernard, and Exner, H.E., Determination of local surface curvature and its frequency distribution by computer-assisted stereometry: Journal of Computer-Assisted Microscopy, v. 2, no. 1, p. 3-23, (1990).

Garnaes., Christensen, F.E., Besenbacher, F., Laegsgaard, E., Stensgaard, I., Scanning tunneling microscopy studies of thin foil X-ray mirrors: Optical Engineering, vol.29, no.6, p. 666-71, June 1990.

George, H.E., Babus'Haq, R.F., O'Callaghan, P.W. and Probert, S.D., A stylus/computer system describing three-dimensional engineering surfaces: Computers in Industry, 13, p. 295-304 (1990).

Glenn, P., Angstrom level profilometry for sub-millimeter to meter scale surface errors: Adv. Opt. Manuf. & Test., Proc. SPIE 1333 (1990).

Glenn, P., Robust, angstrom level circularity profilometry: Adv. Opt. Manuf. & Test., Proc. SPIE 1333 (1990).

Habib, K., Measuring surface roughness of an optical thin film with scanning tunneling microscopes: Proceedings of the SPIE - The International Society for Optical Engineering, vol.1270, p. 147-50, 1990.

Habib, K., Eling, V., Wu, C., Measuring surface roughness of an optical thin film with scanning tunneling microscopes: Journal of Materials Science Letters, vol.9, no.10, p. 1194, Oct. 1990.

Hao Li, Kardar, M., Wetting phenomena on rough substrates: Physical Review B (Condensed Matter) vol.42, no.10 p. 6546-54, 1 Oct. 1990.

Hopke, P.K., Casuccio, G.S., Mershon, W.J., Lee, R.J., The use of fractal dimension to characterize individual airborne particles: Scientific Computing and Automation (Europe) 1990. Proceedings of the Scientific Computing and Automation (Europe) Conference p. 173-8, Editor(s), Karjalainen, E.J., Elsevier, Amsterdam, 1990.

Kanchenko,.A., rynko, u.N., Lyubinetsky, I.V., Melnik, P.V., Nakhodkin, N.G., Use of scanning tunneling microscopy for the consideration of the sample surface roughness in spectroscopy of elastically reflected electrons: Ukrayins'kyi Fizychnyi Zhurnal, vol.35, no.7, p. 1073-5, July 1990, Ukrainian SSR, USSR.

Lee, Y.-H., Carr, J.R., Barr, D.J., Haas, C.J., The fractal dimension as a measure of the roughness of rock discontinuity profiles: International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts, vol.27, no.6, p. 453-64, Dec. 1990.

Li, Y. and Talke, F.E., Limitations and corrections of optical profilometry in surface characterisation of carbon coated magnetic recording disks: J. of Trib., ASME, 112, p. 670-677 (October 1990).

Ling, F.F., Fractals, engineering surfaces and tribology: Wear 136, 141-154 (1990).

Lodén, M. and Bengtsson, A., Mechanical removal of the superficial portion of the stratum corneum by a scrub cream, Methods for the objective assessment of the effects: J. Soc. Cosmet. Chem., 41, p. 111-121 (March/April 1990).

Majumdar, A., Bhushan, B., Role of fractal geometry in roughness characterization and contact mechanics of surfaces: Transactions of the ASME. Journal of Tribology, vol.112, no.2 p. 205-16, April 1990.

Majumdar, A., Tien, C.L., Fractal characterization and simulation of rough surfaces: Wear, vol.136, no.2, p. 313-27, March 1990.

Masuko, M., Shiomi, S., Okabe, H., Acceleration of wear of steel with fatty acid and oxygen under rolling with sliding partial EHD conditions: Lubrication Science v. 3 no. 1 Oct 1990 p. 63-75, 1990.

McAdams, E.T., Effect of surface topography on the electrode-electrolyte interface impedance.Part 3. The fractal approach: Surface Topography, 3, p. 3-24 (1990).

Mikhin, A.N., Dependence of approach of rough surfaces on contacting bodies on load in the elastic contact case: Soviet Journal of Friction and Wear vol.11, no.2 p. 115-18, 1990.

Mitchell, M.W., Bonnell, D.A., Quantitative topographic analysis of fractal surfaces by scanning tunneling microscopy: Journal of Materials Research, vol.5, no.10, p. 2244-54, Oct. 1990.

Moyer, C.A., Applying the modified lambda ratio to bearings and gears: Soc. of Aut. Engs., Paper 900910 (1990).

Mummery, L., Surface texture analysis, the handbook: Hommelwerke, Muhlhausen (1990).

Nakagiri, N., Kaizuka, H., Simulations of STM images and work function for rough surfaces: Japanese Journal of Applied Physics, Part 1 (Regular Papers & Short Notes), vol.29, no.4, p. 744-9April 1990.

Olsson, J., Friction in seals acting on rough piston rod surfaces: Chalmers Univ. of Tech., Sweden, Report No.1990-11-28 (September 1990).

Ondra, J., Fractal approach to the evaluation of surface roughness: Jemna Mechanika a Optika, vol.35, no.11-12, p. 338-40, Nov.-Dec. 1990.

Osintsev, A.V., Ostrovskii, Yu.I., Shchepinov, V.P., Measurement of residual displacements in the zone of mechanical contact between solid bodies by the method of holographic interferometry: Soviet Technical Physics Lettersvol.16, no.6p.455-6, June 1990.

Peeken, H., Ayanoglu, P., Knoll, G., Welsch, G., Measurement of lubricating film thickness, temperature and pressure in gear contacts with surface topography as a parameter: Lubrication Science v. 3 no. 1 Oct 1990 p. 33-42, 1990.

Reiss, G., Schneider, F., Vancea, J., Hoffman, H., Scanning tunneling microscopy on rough surfaces, Deconvolution of constant current images: Applied Physics Letters, vol.57, no.9, p. 867-9, 27 Aug. 1990.

Reiss, G., Vancea, J., Wittmann, H., Zweck, J., Hoffmann, H., Scanning tunneling microscopy on rough surfaces, tip-shape-limited resolution: Journal of Applied Physics, vol.67, no.3, p. 1156-9, 1 Feb. 1990.

Russ, J.C., Surface characterization—Fractal dimensions, Hurst coefficients, and frequency transforms: Journal of Computer-Assisted Microscopy, v. 2, no. 3, p. 161-183, (1990).

Russ, J.C., Computer-Assisted Microscopy, the Measurement of Images: New York, Plenum Press, 453 p, (1990).

Ruzic, D.N., The effects of surface roughness characterized by fractal geometry on sputtering: Nuclear Instruments & Methods in Physics Research, Section B (Beam Interactions with Materials and Atoms), vol.B47, no.2, p. 118-25, April 1990.

Sherrington, I. and Smith, E.H., Areal Fourier analysis of surface topography.Part 1, Computational methods and sampling considerations: Surface Topography, 3, no. 1, p. 43-68 (1990).

Smith, G.T., Powder metallurgy secondary machining operations and the resulting surface integrity: Surface Topography, 3, p. 25-42 (1990).

Srinivasan, S., Russ, J.C., Scattergood, R.O., Fractal analysis of erosion surfaces: Journal of Materials Research, vol.5, no.11, p. 2616-19, Nov. 1990.

Stout, K.J., Davis, E.J., and Sullivan, P.J., Atlas of Machined Surfaces: London, Chapman and Hall, paging unknown, 1990.

Stupak, P.R., Kang, J.H., Donovan, J.A., Fractal characteristics of rubber wear surfaces as a function of load and velocity: Wear, vol.141, no.1, p. 73-84, Dec. 1990.

Takeuchi, K., Uehara, Y., Ushioda, S., Mikoshiba, N., Morita, S., Power spectra of surface roughness of light emitting tunnel junctions measured by scanning tunnelling microscopy: Journal of Vacuum Science & Technology A (Vacuum, Surfaces, and Films), vol.8, no.1, p. 557-60 Jan.-Feb. 1990.

Tanaka, T., On a simple one-dimensional model of rough film surfaces on a substrate: Journal of the Physical Society of Japan, vol.59, no.11 p. 3898-903, Nov. 1990.

Thomas, T. R. & O. A. Gorlenko, Topographicheskiye parametri sherokhovatosti poverkhnosti: Trenie i Iznos 11, 551-555 (1990).

Tricot, C., Wehbi, D. and Roques-Carmes, C., Perturbations et propriétés holdériennes en traitement de signal: Revue Phys. Appl., 25, p. 509-516 (June 1990).

Varnier, F., Llabaria, A., Rasigni, G., Improvement in the method of searching for the fractal nature of rough thin-film top surfaces: Journal of Vacuum Science & Technology A (Vacuum, Surfaces, and Films), ol.8, no.3, pt.1, p. 1554-9, May-June 1990.

Venner, C.H., ten Napel, W.E., Bosma, R., Advanced multilevel solution of the EHL line contact problem: Transactions of the ASME. Journal of Tribology, vol.112, no.3 p. 426-31, July 1990.

Whitehouse, D.J., Dynamic aspects of scanning surface instruments and microscopes: Nanotechnology, vol.1, no.1, p. 93-102, July 1990.

Wood, R.J.K., Use of profilometric measurements in cavitation erosion and corrosion studies: Proc. Instn. Mech. Engrs., 204, p. 63-65 (1990).

Yokohata, T., Kato, K., Ohmura, K., Nanometer-scale roughness study and indentation test with a scanning tunnelling microscope: Journal of Vacuum Science & Technology A (Vacuum, Surfaces, and Films), vol.8, no.1, p. 585-9 Jan.-Feb. 1990.

Zipin, R.B., Analysis of the Rk surface roughness parameter proposals: Prec. Eng., 12, 2, p. 106-108 (April 1990).

# 1991 A-M

Akamatsu, Yoshinobu, Tsushima, Noriyuki, Goto, Toshihide, Hibi, Kenji, Itoh, Kunio, Improvement of roller bearing fatigue life by surface roughness modification: SAE (Society of Automotive Engineers) Transactions v. 100 no. Sect 2 1991, 910958 p. 44-49.

Amadei, Bernard, Illangasekare, Tissa, Modeling flow in non-homogeneous rock joints using the integral transform method: in Rock Mechanics Proceedings of the 33rd U.S. Symposium on Rock Mechanics, 1991. A.A. Balkema, p. 599, 1991.

Bailey, D.M., Sayles, R.S., Effect of roughness and sliding friction on contact stresses: Transactions of the ASME. Journal of Tribology, vol.113, no.4 p. 729-38, Oct. 1991.

Batzle, M.L., Smith, B.J., Hand-held velocity probe for rapid outcrop and core characterization: Rock Mechanics Proceedings of the 33rd U.S. Symposium U.S. Symposium on Rock Mechanics 1991. A.A. Balkema, Rotterdam, Neth. p. 949, 1991.

Bengtsson, A., On three-dimensional measurement of surface roughness: Dept. Prod. Eng., Chalmers Univ. Tech., Sweden, ISBN 91-7032-617-7 (September 1991).

Bennet, J.M., Elings, V., Kjoller, K., Precision metrology for studying optical surfaces: Optics & Photonics News, vol.2, no.5, p. 14-18, May 1991.

Brown, C.A. and Savary, G., Describing ground surface texture using contact profilometry and fractal analysis: Wear, 141, p. 211-226 (1991).

Brown, N.M.D., Taggart, G.M., Hong-Xing You, Application of scanning tunnelling microscopy to the quality control of tungsten carbide (WC-Co) ball bearings: Journal of Materials Science, vol.26, no.18, p. 4971-6, 15 Sept. 1991.

Bursill, L.A., Fan XuDong, Peng JuLin, Fractal analysis of crystalline surfaces at atomic resolution: Philosophical Magazine A (Physics of Condensed Matter, Defects and Mechanical Properties), vol.64, no.2, p. 443-64, Aug. 1991.

Cao, L., Vorburger, T.V., Lieberman, A.G. and Lettieri, T.R., Light-scattering measurement of the rms slopes of rough surfaces: Applied Optics, 30, 22, p. 3221-3227 (August 1991).

Cavdar, B. and Ludema, K.C., Dynamics of dual film formation in boundary lubrication of steels. Part I. Functional nature and mechanical properties: Wear, 148, p. 305-327 (1991).

Chan, Kwai S., Micromechanics of shear ligament toughening: Metallurgical Transactions A (Physical Metallurgy and Materials Science) v. 22A no. 9 Sep 1991 p. 2021-2029, 1991.

Chesters, S., Wang, H.-C., Kasper, G., A fractal-based method for describing surface texture: Solid State Technology, vol.34, no.1p.73-7, Jan. 1991.

Chizhik, S.A., Troyanovskii, A.M., Sviridenok, A.I., Scanning tunnel microscopy of friction surfaces: Soviet Journal of Friction and Wear vol.12, no.4 p. 16-22, 1991.

Courjon, D., Spajer, M., Jalocha, A., Leblanc, S., Near-field optical microscopy and optical tunneling detection: AIP Conference Proceedings, no.241, p. 70-8, 1991.

Dalton, Gregory M., Schey, John A., Effects of bead surface preparation on friction in the drawbead test: SAE (Society of Automotive Engineers) Transactions v. 100 no. Sect 5 1991, 910511 p. 520-530.

Dan'kin, A. A., Markov, A. A., Arbuzov, V. V., Belyavskij, I. F., Materials selection for production of the equipment subjected to the gas-abrasive wear: Khimicheskoe i Neftekhimicheskoe Mashinostroenie no. 9 Sep 1991 p. 25-27, 1991.

Eaglesham, D. J., Gossmann, H. -J., Cerullo, M., Pfeiffer, L. N., Windt, D., Limited-thickness epitaxy of semiconductors down to room temperature: Institute of Physics Conference Series v. 117. IOP Publishing Ltd, Bristol, Engl. p. 431-434, 1991.

Edel'man, V.S., Troyanovskii, A.M., Khaikin, M.S., Stepanyan, G.A., Volodin, A.P., The scanning tunneling microscopy combined with the scanning electron microscopy-a tool for the nanometry: Journal of Vacuum Science & Technology B (Microelectronics Processing and Phenomena), vol.9, no.2, pt.2, p. 618-22, March-April 1991.

Efimov, V. N., Zhadkevich, M. L., Sokol'vak, V. S., Influence of finishing treatment parameters of complex surfaces using free abrasive on their roughness: Tyazheloe Mashinostroenie no. 10 Oct 1991 p. 25-27, 1991.

Eklund, E.A., Bruinsma, R., Rudnick, J., Williams, R.S., Submicron-scale surface roughening induced by ion bombardment: Physical Review Letters, vol.67, no.13, p. 1759-62, 23 Sept. 1991.

El-Atta, U.B.S.A., Surface roughness assessment in three-directional machined surfaces for some manufacturing operations: Fac. of Eng., El - Mansoura Univ. (1991).

Elsing, R., Optimierung von Strahlprozessen durch Computer simulation (optimization of peening processes by means of computer simulation): Metall v. 45 no. 10 Oct 1991 p. 1014-1016, 1991.

Evseev, D.G., Medvedev, B.M., Grigoriyan, G.G., Modification of the elastic-plastic model for the contact of rough surfaces: Wear, vol.150, no.1-2, p. 79-88, 21 Oct. 1991.

Fahmy, Y., Russ, J.C., Koch, C.C., Application of fractal geometry measurements to the evaluation of fracture toughness of brittle intermetallics: Journal of Materials Research, vol.6, no.9, p. 1856-61, Sept. 1991.

Fan Yujin, Zheng Linqing, A study on the limit criterion of full and partial lubrication: Wear, vol.143, no.2, p. 221-9, 20 March 1991.

Farrell, Paul, Wert, Kevin, Webb, Ralph, Heat transfer and friction characteristics of turbulator radiator tubes: SAE (Society of Automotive Engineers) Transactions v. 100 no. Sect 5 1991, 910197 p. 218-230.

Files-Sesler, L.A., Randall, J.N., Harkness, D., Scanning tunneling microscopy,critical dimension and surface roughness analysis: Journal of Vacuum Science & Technology B (Microelectronics Processing and Phenomena), vol.9, no.2, pt.2, p. 659-62, March-April 1991.

Goldberg, J.L., Wang, X.-S., Bartelt, N.C., Williams, E.D., Surface height correlation functions of vicinal Si(111) surfaces using scanning tunneling microscopy: Surface Science, vol.249, no.1-3, p. L285-92, June 1991.

Gomez-Rodriguez, J.M., Baro, A.M., Salvarezza, R.C., Fractal characterization of gold deposits by scanning tunneling microscopy: Journal of Vacuum Science & Technology B (Microelectronics Processing and Phenomena), vol.9, no.2, pt.2, p. 495-9, March-April 1991.

Guenais, B., Poudoulec, A., Durel, V., Ballini, Y., Guivarc'h, A., TEM study of NiGa/(001)GaAs and GaAs/NiGa/(001)GaAs heterostructures: Institute of Physics Conference Series v. 117. IOP Publishing Ltd, Bristol, UK, p. 257-260, 1991.

Hartmann, E., Hahn, P.O., Behm, R.J., Determination of nanometer structures and surface roughness of polished Si wafers by scanning tunneling microscopy: Journal of Applied Physics, vol.69, no.8, pt.1, p. 4273-81, 15 April 1991.

Hayes, L., Parkinson, G.M., Pruett, G., Buglass, J., Transmission electron microscopy of intermediate modulus carbon fibres: Electron Microscopy and Analysis 1991. Proceedings of the Institute of Physics Electron Microscopy and Analysis Group Conference p. 271-4, Editor(s), Humphreys, F.J., IOP, Bristol, UK, 1991.

Heberle, A. P., Ruehle, W. W., Koehler, K., Resonant electron and hole tunneling between GaAs quantum wells: Institute of Physics Conference Series v. 126. IOP Publishing Ltd, Bristol, UK p. 367-370, 1991.

Hess, D.P., Soom, A., Normal vibrations and friction under harmonic loads. II. Rough planar contacts: Transactions of the ASME. Journal of Tribology, vol.113, no.1 p. 87-92, Jan. 1991.

Hoffman, W.P., Hurley, W.C., Liu, P.M., Owens, T.W., The surface topography of non-shear treated pitch and PAN carbon fibers as viewed by the STM: Journal of Materials Research, vol.6, no.8, p. 1685-94, Aug. 1991.

Hokkirigawa, K., Wear mode map of ceramics: Wear, vol.151, no.2, p. 219-28, 20 Dec. 1991.

Holt, D. B., Norman, C. E., Salviati, G., Franchi, S., Bosacchi, A., Characterization of GaAs/AlAs quantum well structures by HREM and LTSCL: Institute of Physics

Conference Series v. 117. IOP Publishing Ltd, Bristol, UK. p. 689-695, 1991.

Hopkins, Deborah L., Analytical model for stress concentration and failure along fault planes: Rock Mechanics Proceedings of the 33rd U.S. Symposium U.S. Symposium on Rock Mechanics 1991. A.A. Balkema, Rotterdam, p. 131, 1991.

Horve, Les, Correlation of rotary shaft radial lip seal service reliability and pumping ability to wear track roughness and microasperity formation: SAE (Society of Automotive Engineers) Transactions v. 100 no. Sect 6 1991, 910530 p. 620-627.

Huang, Weidong, Zhang, Zhongyuan, Lin, Zhaorong, Investigation of diffusion bonding for Ti-6Al-4V titanium alloys: Journal of Nanjing Aeronautical Institute (English Edition) v. 8 no. 1 Oct 1991. p. 67-74, 1991.

Ichinose, Hiromichi, Akamatsu, Kazuo, Terasaki, Makoto, Katsuki, Hiroaki, Nagano, Masamitsu, Deposition of TiN films onto glaze of porcelain by reactive sputtering: Journal of the Ceramic Society of Japan, International Edition v. 99 no. 12 Dec 1991 p. 1182-1186, 1991.

Jen Fin Lin, Hsiaw Yeh Chu, A numerical solution for calculating elastic deformation in elliptical-contact EHL of rough surface: Transactions of the ASME. Journal of Tribology, vol.113, no.1 p. 12-21, Jan. 1991.

Komla, A., Aries, L., Naboulsi, B., Traverse, J.P., Texture of selective surfaces for photothermal conversion: Solar Energy Materials, vol.22, no.4, p. 281-92, Aug. 1991.

Kononenko,.G., ostomel'skii,.S., Kononenko, E.V., Volosyuk, M.A., Experimental investigation of a diffusion-dislocation mechanism in the development of a contact between two rough surfaces which are being forced together: Metallofizika, vol.13, no.12, p. 13-21, Dec. 1991.

Kononenko, V.G., Gostomel'skii, V.S., Kononenko, E.V., Diffusion-dislocation formation at a contact between rough surfaces which are being forced together (pressure welding): Metallofizika, vol.13, no.12, p. 3-12, Dec. 1991.

Kostogryz, S.G., Kovalevskii, V.V., Osatskii, N.I., Surface roughness effect on vibration behavior of mechanical contact at low-amplitude fretting: Soviet Journal of Friction and Wear vol.12, no.2 p. 22-6, 1991.

Kudish, I.I., Statistical model of contact fatigue of rough bodies: Soviet Journal of Friction and Wearvol.12, no.2p.1-6, 1991.

Lakhtakia, A., A comment on 'Wave scattering from non-random fractal surfaces': Optics Communications, vol.82, no.5-6, p. 436-8, 1 May 1991.

Lindsay, James H., Nine, Harmon D., Mickalich, Mary K., Effect of surface finish on the drawing characteristics of chromium-plated sheet metal forming tools: SAE (Society of Automotive Engineers) Transactions v. 100 no. Sect 5 1991, 910510 p. 507-519.

Ling, K. J., Tse, W. S., Peng, P., Shen, S. H., Sun, K. T., Lin, S. J., SERS in sandblast roughened metal surface: Physica Status Solidi (A) Applied Research v. 128 no. 2 Dec 1991 p. K123-K128, 1991.

Lininsh, O.A., and Rudzit, Ye. A., Calculation of sliding pairs wear rate using random process model of roughness: Soviet Journal of Friction and Wearvol.12, no.4p.1-7, 1991.

Lubrecht, A.A., Ioannides, E., A fast solution of the dry contact problem and the associated sub-surface stress field, using multilevel techniques: Transactions of the ASME. Jourhal of Tribology, vol.113, no.1 p. 128-33, Jan. 1991.

Majumdar, A., Effect of interfacial roughness on phonon radiative heat conduction: Transactions of the ASME. Journal of Heat Transfer vol.113, no.4 p. 797-805, Nov. 1991.

Majumdar, A., Bhushan, B., Fractal model of elastic-plastic contact between rough surfaces: Transactions of the ASME. Journal of Tribology, vol.113, no.1 p. 1-11, Jan. 1991.

Majumdar, A., Tien, C.L., Fractal network model for contact conductance: Transactions of the ASME. Journal of Heat Transfer vol.113, no.3 p. 516-25, Aug. 1991.

Mallard, R. E., Feuillet, G., Magnea, N., Mariette, H., Ligeon, E., Analysis of diffuse and abrupt HgTe/CdTe interfaces under chemically sensitive imaging conditions: Institute of Physics Conference Series v. 117. IOP Publishing Ltd, Bristol, UK, p. 43-46, 1991.

Mann, J.A., Rains, E.M., Woyczynski, W.A., Measuring the roughness of interfaces: Chemometrics and Intelligent Laboratory Systems, vol.12, no.2 p. 169-80, Dec. 1991.

Marshall, P., Price, J., Topography of carbon fibre surfaces: Composites, vol.22, no.5, p. 388-93, Sept. 1991.

McCool, John I., Non-gaussian effects in microcontact, in: 5th International Conf. on Metrology and Properties of Engineering Surfaces, Leicester, UK 1991 Apr 10-12.

Michelland-Abbé, Sophie, Coster, Michel, Chermant, Jean-Louis, and Mordike, B.L., Quantitative fractography of microcrystalline steels by automatic image analysis: Journal of Computer-Assisted Microscopy, v. 3, no. 1, p. 23-32, (1991).

## 1991 N-Z

Nivatvongs, K., Cheng, H.S., Ovaert, T.C. and Wilson, W.R.D., Influence of surface topography on low-speed asperity lubrication breakdown and scuffing: Wear, 143, p. 137-148 (1991).

Ogilvy, J. A., Theory of wave scattering from random rough surfaces: Adam Hilger, Bristol (1991).

Ogilvy, J.A., Numerical simulation of friction between contacting rough surfaces: Journal of Physics D (Applied Physics) vol.24, no.11 p. 2098-109, 14 Nov. 1991.

Okazaki, M., McEvily, A. J., Tanaka, T., On the mechanism of fatigue crack growth in silicon nitride: Metallurgical Transactions A (Physical Metallurgy and Materials Science) v. 22A no. 6 Jun 1991 p. 1425-1434, 1991.

Pidduck, A. J., Nayar, V., Keir, A. M., Optical microscopy of silicon wafer surfaces with subnanometre vertical sensitivity: Institute of Physics Conference Series v. 117. IOP Publishing Ltd, Distribution Department, Bristol, UK, p. 239-244, 1991.

Poirier,.E., Hance, B.K., White, J.M., Fox, M.A., Creager, S.E., Determination of the surface area of variously polished gold electrodes by scanning tunneling microscopy: Journal of Vacuum Science & Technology A (Vacuum, Surfaces, and Films), vol.9, no.3, pt.2, p. 1630-3, May-June 1991.

Pollack, Henry M., Urch, Ralph E., Landing gear design requirements for bomb-damaged runway operations: SAE Technical Paper Series. Warrendale, PA, SAE 911199. p. 1-17, 1991.

Power, W.L., and Tullis, T.E., Euclidean and fractal models for the description of rock surface roughness: Journal of Geophysical Research, v. 96, no. B1, p. 415-424, (1991).

Prater, C.B., Hansma, P.K., Improved scanning ion-conductance microscope using microfabricated probes: Review of Scientific Instruments, vol.62, no.11, p. 2634-8, Nov. 1991.

Reiss, G., Bruckl, H., Vancea, J., Lecheler, R., Hastreiter, E., Scanning tunneling microscopy on rough surfaces-quantitative image analysis: Journal of Applied Physics, vol.70, no.1, p. 523-5, 1 July 1991.

Robinson, G.M., Perry, D.M., and Peterson, R.W., Optical interferometry of surfaces: Scientific American, v. 265, no. 1, p. 66-71, (1991).

Robinson, R.S., Yuce, H.H., Scanning tunneling microscopy of optical fiber corrosion, surface roughness contribution to zero-stress aging: Journal of the American Ceramic Society vol.74, no.4 p. 814-18, April 1991.

Rosén, B-G., Interactive surface modelling and representation of surface roughness and topography: Dept. Prod. Eng., Chalmers Univ. Tech., Sweden, ISBN 91-7032-638-X, Ph.D. dissertation (November 1991).

Russ, J.C., Measurement of the fractal dimension of surfaces: Journal of Computer-Assisted Microscopy vol.3, no.3 p. 127-43, Sept. 1991.

Russ, J.C., Multifractals and mixed fractals: Journal of Computer-Assisted Microscopy, v. 3, no. 4, p. 211-231, (1991).

Sadeghi, F., A comparison of the fluid models effect on the internal stresses of rough surfaces: Transactions of the ASME. Journal of Tribology, vol.113, no.1 p. 142-9, Jan. 1991.

Sander, M., A Practical Guide to the Assessment of Surface Texture: Feinpruf Perthen, Gottingen (1991).

Shifeng Wu, Cheng, H.S., A sliding wear model for partial-EHL contacts: Transactions of the ASME. Journal of Tribology, vol.113, no.1 p. 134-41, Jan. 1991.

Siochi, Emilie J., Gautreaux, Carol R., St. Clair, Terry L., Effect of the addition of N-(4-benzoylphenyl)phthalimide on characteristics of LaRC TPI: Proceedings/Abstracts - Intl. Conf. on Polyimides 4TH. Soc of Plastics Engineers, Brookfield, CT, 4 p. , 1991.

So, H., Liu, D.C., Anelastic-plastic model for the contact of anisotropic rough surfaces: Wear, vol.146, no.2, p. 201-18, 28 June 1991.

Song, J. F. and Vorburger, V.(1991), Stylus profiling at high resolution and low force: Applied Optics, v. 30, No. 1, p. 42-50?.

Stoll, E.P., Gimzewski, J.K., Fundamental and practical aspects of differential scanning tunneling microscopy: Journal of Vacuum Science & Technology B (Microelectronics Processing and Phenomena), vol.9, no.2, pt.2, p. 643-7, March-April 1991.

Stout, K.J., Sullivan, P.J., Dong, W.P., Mainsah, E., Subari, K. and Mathia, T., The development of an integrated approach to 3D surface finish assessment: Sch. Man. & Mech. Eng., Univ. of Birmingham, K, EC Contract No.3374/1/0/170/90/2 Int. Rep. No.1 (March 1991).

Stupak, P.R., Kang, J.H., Donovan, J.A., Computer-aided fractal analysis of rubber wear surfaces: Materials Characterization, vol.27, no.4, p. 231-40, Dec. 1991.

Tonck, A., Houze, F., Boyer, L., Loubet, J.-L., Georges, J.-M., Electrical and mechanical contact between rough gold surfaces in air: Journal of Physics, Condensed Matter vol.3, no.27 p. 5195-201, 8 July 1991.

Varnier, F., Llebaria, A., Rasigni, G., How is the fractal dimension of a thin film top surface connected with the roughness parameters and anisotropy of this surface?: Journal of Vacuum Science & Technology A (Vacuum, Surfaces, and Films), vol.9, no.3, pt.1, p. 563-9, May-June 1991.

Vovkushevskii, A.V., Variational formulation and solution methods for contact problem with friction, with allowance for surface roughness: Mechanics of Solidsvol.26, no.3p.52-8, 1991.

Wolff, R., The influence of surface roughness texture on the temperature and scuffing in sliding contact: Wear, vol.143, no.1, p. 99-118, 10 March 1991.

Xian Liang, Zheng Linqing, A numerical model for the elastic contact of three-dimensional real rough surfaces: Wear, vol.148, no.1, p. 91-100, 1 Aug. 1991.

Xiaoguang Sun, Jaggard, D.L., Reply to a comment on 'Wave scattering from non-random fractal surfaces': Optics Communications, vol.82, no.5-6, p. 439-40, 1 May 1991.

Xing Wang, F., Lacey, P., Gates, R.S., Hsu, S.M., A study of the relative surface conformity between two surfaces in sliding contact: Transactions of the ASME. Journal of Tribology, vol.113, no.4 p. 755-61, Oct. 1991.

Yanagisawa, Takashi, Sanada, Masamitu, Koga, Tadashi, Hirabayashi, Hiroshi, Influence of designing factors on the sealing performance of C-seal: SAE (Society of Automotive Engineers) Transactions v. 100 no. Sect 6 1991, 910535 p. 651-657.

Zhang, J., Moslehy, F.A., Rice, S.L., A model for friction in quasi-steady-state sliding. II. Numerical results and discussion: Wear, vol.149, no.1-2, p. 13-25, 30 Sept. 1991.

Zhu, N. Y., Landstorfer, F. M., Greving, G., Three-dimensional terrain effects on high frequency electromagnetic wave propagation: European Microwave Conference, Proceedings, v. 2 no. 21. Microwave Exhibitions & Publ Ltd, Turnbridge Wells, UK. p. 1205-1210, 1991.

# 1992 A-G

Abdelsalam, M. W., Khattab, A. F., Khalifa, A. A., Bakry, M. F., Flow capacity through wide and submerged vegetal channels: Journal of Irrigation and Drainage Engineering v. 118 no. 5 Sep-Oct 1992 p. 724-732, 1992.

Abe, Masato, Tsunashima, Hitoshi, Mechanically controlled permanent magnet levitation system for maglev transport vehicle: SAE Special Publications no. 926. Warrendale, PA, p. 19-26, 1992.

Abe, T., Steigmeier, E.F., Hagleitner, W., Pidduck, A.J., Microroughness measurements on polished silicon wafers: Japanese Journal of Applied Physics, Part 1 (Regular Papers & Short Notes), vol.31, no.3, p. 721-8 March 1992.

Abe, Takeji, Shimizu, Ichiro, Nishiyama, Taiyo, Three-dimensional observation of roughening of free surface during compressive plastic deformation of polycrystalline iron: JSME International Journal, Series 1, Solid Mechanics, Strength of Materials v. 35 no. 4 Oct 1992 p. 462-469, 1992.

Aguilar, M., Pancorbo, M., Vazquez, F., Gomez, F., Anguiano, E., Gonzalez, J.M., Vazquez, M., Cebollada, F., Study of the surface roughness of Co-based amorphous alloys by STM: Ultramicroscopy, vol.42-44, pt.B, p. 1329-36, July 1992a.

Aguilar, M., Pancorbo, M., Vazquez, F., Gomez, F., Anguiano, E., Gonzalez, J. M., Vazquez, M., Cebollada, F., Topography of sputtered Si(100) surfaces studied by STM in air: Ultramicroscopy, v. 42-44 no. Pt. B Jul 1992. p. 1376-1380, 1992b.

Aguilar, M., Anguiano, E., Vászquez, F., and Pancorbo, M., Study of the fractal character of surfaces by scanning tunneling microscopy—Errors and limitations: Journal of Microscopy, v. 167, Pt. 2, p. 197-213, (1992c).

Aizawa, Tatsuhiko, Chihara, Tatsuya, Kihara, Junji, On-process tribosensing system to predict change of tractions with work reduction: Sensors and Signal Processing for Manufacturing American Society of Mechanical Engineers, Production Engineering Division, PED v. 55 1992. ASME, New York. p. 161-176, 1992.

Akagi, Hideyuki, Effects of toner charge, size, and surface structure on its adhesion forces: Proceedings of SPIE - The International Society for Optical Engineering v. 1670. Bellingham, WA, p. 138-145, 1992.

Akamatsu, Y., Tsushima, N., Goto. T. and Hibi, K., Influence of surface roughness skewness on rolling contact fatigue life: STLE/ASME, 35, 4, p. 745-750 (1992).

Akh'yan, A.M., Quartz ceramics roller production: Steklo i Keramika no. 9 Sep 1992. p. 27-28, 1992.

Aksenov, V.L., Korneev, D.A., Chernenko, L.P., Time-of-flight four-beam neutron reflectometer REFLEX at the high-flux pulsed reactor IBR-2, some polarized neutron reflectometry applications: Proceedings of SPIE - The International Society for Optical Engineering v. 1738 1992. Bellingham, WA, p. 335-345, 1992.

Allen, R. G., Prueger, J. H., Hill, R. W., Evapotranspiration from isolated stands of hydrophytes. Cattail and bulrush: Transactions of the ASAE v. 35 no. 4 Jul-Aug 1992 p. 1191-1198, 1992.

Al-Suhaibani, Abdul-Rahman S., Anani, Bassam A., AlKharashi, Ibrahim A., Effect of utility cut patching on pavement deterioration: Journal of King Saud University, Engineering Sciences v. 4 no. 2 1992 p. 171-192, 1992.

Altkorn, Robert I., Haidle, Rudy H., Chang, Jon C., Ulmer, Melville P., Dace, G., Teague, Peter F., Upham, D., Takacs, Peter Z., Rodricks, Brian G., Georgopoulos, P., Viles, N., Butler, K., DeBooth, M., Wiewel, D., Electroform replication of ultrasmooth mirrors for x-ray astronomy: Proceedings of SPIE - The International Society for Optical Engineering v. 1779 1992. Bellingham, WA, p. 88-94, 1992.

Amadei, B., Illangasekare, T., Analytical solutions for steady and transient flow in non-homogeneous and anisotropic rock joints: International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts v. 29 no. 6 Nov 1992 p. 561-572, 1992.

Andreyev, G. A., Galkina, T. V., Orlova, T. I., Khlyavich, Ya. L., Computer modelling of the scattering of an electromagnetic wave by a surface with chaotic roughnesses: Soviet Journal of Communications Technology & Electronics (English translation of Radiotekhnika i Elektronika) v. 37 no. 10 1992 p. 46-50.

Artunc, N., Selvi, S., Ozturk, Z. Z., Effects of surface and interface scattering on the electrical resistivity of Cu/Ag double-layered thin films: Thin Solid Films v. 221 no. 1-2 Dec 10 1992 p. 207-213, 1992.

Arzhanova, T.A., On the influence of a basic sufrace on the microprofile of a cathodic deposit: Zashchita Metallov no. 4 Apr 1992. p. 688-690, 1992.

Aspinwall, D. K., Wisc, M. L. H., Stout, K. J., Goh, T. H. A., Zhao, F. L., El-Menshawy, M. F., Electrical discharge texturing: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 183-193, 1992.

Augusti, G., Bartoli, G., Borri, C., Gusella, V., Spinelli, P., Wind load and response of broadcasting antennas. Three years of research work in cooperation with RAI: Journal of Wind Engineering and Industrial Aerodynamics v. 43 pt 3 Oct 1992. p. 2077-2088, 1992.

Avnir, D., Farin, D., Pfeifer, P., A discussion of some aspects of surface fractality and of its determination: New Journal of Chemistry, vol.16, no.4, p. 439-49, April 1992.

Babus'Haq, R.F., Evans, R., O'Callaghan P.W. and Probert, S.D., Deformation of engineering surfaces under static loads: Int. J. Mach. Tools Manuf., 32, 1/2, p. 39-44 (1992).

Baker, Lionel R., Characterization and measurement of localized surface quality: Proceedings of SPIE - The International Society for Optical Engineering v. 1781 1992. Bellingham, WA, p. 187-198, 1992.

Baker, Lionel R. (Ed.), Specification and Measurement of Optical Systems: Proceedings of SPIE - The International Society for Optical Engineering v. 1781 1992.Intl Soc for Optical Engineering, Bellingham, WA, 408p, 1992.

Barabasi,.-L., ourbonnais., Jensen, M., Kertesz, J., Vicsek, T., Yi-Cheng Zhang, Multifractality of growing surfaces: Physical Review A (Statistical Physics, Plasmas, Fluids, and Related Interdisciplinary Topics), vol.45, no.10, p. R6951-4, 15 May 1992.

Baran, G.R., Roques-Carmes, C., Wehbi, D., Degrange, M., Fractal characteristics of fracture surfaces: Journal of the American Ceramic Society vol.75, no.10 p. 2687-91, Oct. 1992.

Bauer, Helmut F., Liquid oscilations in a circular cylindrical container with 'sliding' contact line: Forschung im Ingenieurwesen v. 58 no. 10 Oct 1992 p. 240-251, 1992.

Bell, A.G., Beerburrum deviation long term pavement performance study. Lessons from the first six years: Pavement Performance and Materials Proceedings - Conference of the Australian Road Research Board v. 16 pt 2 1992. Australian Road Research Board, Nunawading, Aust. p. 143-158, 1992.

Bennett, J.M., Precision metrology for studying thin films and surfaces: Thin Solid Films, 220, p. 227-233 (1992).

Bennett, Jean M., Recent developments in surface roughness characterization: Measurement Science & Technology v. 3 no. 12 Dec 1992. p. 1119-1127, 1992.

Bertuzzi, P., Chanzy, A., Vidal-Madjar, D., Autret, M., Use of a microwave backscatter model for retrieving soil moisture over bare soil: International Journal of Remote Sensing v. 13 no. 14 Sep 20 1992. p. 2653-2668, 1992.

Beyerer, J., Suppression of stochastically placed, straight toolmarks to enhance objects and defects: Technisches Messen TM v. 59 no. 10 Oct 1992 p. 388-397, 1992.

Bhattacharyya, D., Chaudhuri, S., Pal, A. K., Some aspects of surface roughness in polycrystalline thin films, optical constants and grain distribution: Vacuum v. 43 no. 12 Dec 1992 p. 1201-1205, 1992.

Bhushan, B., Majumdar, A., Elastic-plastic contact model for bifractal surfaces: Wear, vol.153, no.1, p. 53-64, 15 March 1992.

Biryukov, S.V., Shear surface waves in periodic structure of rectangular projections of small height: Akusticheskii Zurnal v. 38 no. 4 Jul-Aug 1992. p. 594-600, 1992.

Boehm, Heinz-Juergen, Parameters for evaluating the wearing behaviour of surfaces: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 109-113, 1992.

Bofah, K. K., Kramer, C., Heat transfer in bulk material at a low bed depth under exposure to impacting jets of air: Gas Waerme International v. 41 no. 9 Sep 1992 p. 355-360, 1992.

Boher, Pierre, Houdy, Philippe, Magerl, Andreas, Yamada, K., Endoh, Yasuo, Ruterana, P., Low d-spacing titanium-based multilayers for neutrons: Proceedings of SPIE - The International Society for Optical Engineering v. 1738 1992. Bellingham, WA, p. 67-78, 1992.

Borodich, F.M., Mosolov, A.B., Fractal roughness in the contact problems: Prikladnaya Matematika i Mekhanika v. 56 no. 5 Sep-Oct 1992. p. 786-795, 1992.

Boudreau, B. D., Raja, J., Analysis of lay characteristics of three-dimensional surface maps: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 171-177, 1992.

Boulanger, Jacques, 'Motifs' method. Interesting complement to ISO parameters for some functional problems: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 203-209, 1992.

Bray, G. H., Reynolds, A. P., Starke, E. A. Jr., Mechanisms of fatigue crack retardation following single tensile overloads in powder metallurgy aluminum alloys: Metallurgical Transactions A (Physical Metallurgy and Materials Science) v. 23A no. 11 Nov 1992 p. 3055-3066, 1992.

Bukharaev, A.A., Gubydullin, F.F., Lobkov, V.S., Nazarov, A.V., Berdunov, N.V., Scanning tunneling microscopy and spectroscopy of silicon surfaces after ion and laser modification: Physica Status Solidi A, vol.131, no.1, p. 79-87, 16 May 1992.

Burman, L.L., Denisenko, A.P., Ershov, A.N., Pavslov, E.R., Sidorko, V.I., Syrovatskij, M.F., Shtejngol'ts, Z.I., Studying microturning process of parts from optical crystals: Avtometriya no. 1 Jan-Feb 1992. p. 79-86, 1992.

Carper, H. J. Jr, Ertas, A., Issa, J., Cuvalci, O., Effect of some material, manufacturing, and operating variables on the friction coefficient in OCTG connections: Journal of Tribology, Transactions of the ASME v. 114 no. 4 Oct 1992 p. 698-705, 1992.

Chen, Jiabi, Zhang, Zhengze, Zhu, Li, Image information modulation and processing for fringe scanning optical profiler: Proceedings of SPIE - The International Society for Optical Engineering v. 1731 1992. Bellingham, WA, p. 263-266, 1992.

Chen, K. S., Fung, Adrian K., Weissman, David A., A backscattering model for ocean surface: IEEE Transactions on Geoscience and Remote Sensing v. 30 no. 4 Jul 1992 p. 811-817, 1992.

Chen, Tao, Zhu, Li, Chen, Jiabi, Electro-optical information processing for optical heterodyne interferometry profilometer: Proceedings of SPIE - The International Society for Optical Engineering v. 1731 1992, p. 259-262, 1992.

Cheng, C. -M., Kareem, Ahsan, A crosswind response of reinforced concrete chimneys: Journal of Wind Engineering and Industrial Aerodynamics v. 43 pt 3 Oct 1992. p. 2141-2152, 1992.

Cheng, Yuping, Xie, Youbai, Study of squeeze film between non-normal rough surfaces under partial hydrodynamic lubrication: Journal of Xi'an Jiaotong University v. 26 no. 3 Jun 25 1992 p. 59-65, 1992.

Ciofalo, M., Collins, M.W., Large-eddy simulation of turbulent flow and heat transfer in plane and rib-roughened channels: International Journal for Numerical Methods in Fluids v. 15 no. 4 Aug 30 1992. p. 453-489, 1992.

Cole, S.J., Sayles, R.S., A numerical model for the contact of layered elastic bodies with real rough surfaces: Transactions of the ASME. Journal of Tribology, vol.114, no.2 p. 334-40, April 1992.

Collin, Robert E., Electromagnetic scattering from perfectly conducting rough surfaces (A new full wave method): IEEE Transactions on Antennas and Propagation v. 40 no. 12 Dec 1992. p. 1466-1477, 1992.

Collins, Emmanuel G. Jr., King, James, A., Phillips, Douglas J., Hyland, David C., High performance, accelerometer-based control of the mini-MAST structure: Journal of Guidance, Control, and Dynamics v. 15 no. 4 Jul-Aug 1992 p. 885-892, 1992.

Crocker, G., Observations of the snowcover on sea ice in the Gulf of Bothnia: International Journal of Remote Sensing v. 13 no. 13 Sep 10 1992 p. 2433-2445, 1992.

Crone, R. M., Peck, P. R., Jhon, M. S., Karis, T. E., Scaling criteria for slider miniaturization using the generalized Reynolds equation: American Society of Mechanical Engineers (Paper). ASME, New York, 92-Trib-38. p. 1-7, 1992.

Cumo, Maurizio, Subcooled flow boiling CHF at high liquid velocity: Institution of Chemical Engineers Symposium Series v. 1 no. 129. Inst of Chemical Engineers, Davis Building, Rugby, Engl. p. 15-34, 1992.

Cuthbert, L., Huynh, V. M., Statistical analysis of optical Fourier transform patterns for surface texture assessment: Measurement Science & Technology v. 3 no. 8 Aug 1992 p. 740-745, 1992.

de Fornel, F., Salomon, L., Adam, P., Bourillot, E., Goudonnet, J. P., Neviere, M., Scanning tunneling microscopy and X-ray reflectometry of Pt and Pd thin films prepared by DC sputtering: Ultramicroscopy v. 42-44 no. Part A Jul 1992. p. 572-579, 1992.

Denape, J., Marzinotto, A., Petit, J. A., Roughness effect of silicon nitride sliding on steel under boundary lubrication: Wear v. 159 no. 2 Dec 1 1992 p. 173-184, 1992.

DeStefano, Paul R., Western, Arthur B., Stahl, H.P., Joenathan, Charles, Design review of an infrared phase-shifting interferometer: Proceedings of SPIE - The International Society for Optical Engineering v. 1779. p. 35-46, 1992.

Dmitriev, A. F., Tyshenko, A. I., Khlapuk, N. N., Hydraulic studies of grass carpets for strengthening canals: Gidrotekhnicheskoe Stroitel'stvo no. 5 May 1992 p. 30-33, 1992.

Domanski, Andrzej W., Wolinski, Tomasz R., Surface roughness measurement with optical fibers: IEEE Transactions on Instrumentation and Measurement v. 41 no. 6 Dec 1992. p. 1057-1061, 1992.

Domashev, Ye. F., Godunov, V. F., Struchenko, G. Ye., Mechanism of enhancement of heat and mass transfer in a vapor-generating channel with a transverse microfin roughness: Heat Transfer Research v. 24 no. 4 1992. p. 465-470, 1992.

Dong, W. P., Sullivan, P. J., Stout, K. J., Comprehensive study of parameters for characterizing three-dimensional surface topography. I, Some inherent properties of parameter variation: Wear v. 159 no. 2 Dec 1 1992 p. 161-171, 1992.

Dong, W.P., Luo, N.L., Sullivan, P.J. and Stout, K.J., A proposal of parameters for characterising three-dimensional surface topography - for the EC Project on Development of Methods for the Characterisation of Surface Topography in Three Dimensions: Sch. Man. & Mech. Eng., Univ. of Birmingham, K, EC Contract No.3374/1/0/170/90/2 (1992).

Dong, W.P., Sullivan, P.J., Stout, K.J., Significance of surface features in characterizing 2-D and 3-D surface topography: Engineered Surfaces American Society of Mechanical Engineers, Production Engineering Division, PED v. 62 1992. ASME, New York. p. 1-15, 1992.

Ebadian, M. A., and Oosthuizen, P. H. (eds.), Fundamentals of Forced Convection Heat Transfer: American Society of Mechanical Engineers, Heat Transfer Division, HTD v. 210 1992. ASME. 171p, 1992.

Egert, Charles M., Roughness evolution of optical materials induced by ion beam milling: Proceedings of SPIE, v. 1752. Bellingham, WA, p. 63-72, 1992.

Ehmann, K.F. (Ed.), Wilson, W.R.D. (Ed.), Engineered Surfaces: Engineered Surfaces American Society of Mechanical Engineers, Production Engineering Division, PED v. 62 1992. ASME, New York. 229p, 1992.

El-Hakim, Omnia, Salama, Mohamed M., Velocity distribution inside and above branched flexible roughness: Journal of Irrigation and Drainage Engineering v. 118 no. 6 Nov-Dec 1992. p. 914-927, 1992.

Elssner, Karl E., Burow, Regina, Schulz, Guenter, Vogel, Andreas: Absolute interferometric surface testing, a stringent need: Proceedings of SPIE - The International Society for Optical Engineering v. 1781 1992. Bellingham, WA, p. 280-286, 1992.

El-Wardany, T.I., Elbestawi, M.A., Attia, M.H., Mohamed, E., Surface finish in turning of hardened steel: Engineered Surfaces American Society of Mechanical Engineers, Production Engineering Division, PED v. 62 1992. ASME, New York, nt. p. 141-159, 1992.

Enea, O., Rafai, M., Naudon, A., STM/STS and XPS study of oxidized metal powders: Ultramicroscopy v. 42-44 no. Part A Jul 1992. p. 749-756, 1992.

Enomoto, Toshiyuki, Tani, Yasuhiro, Sato, Hisayoshi, Kamimura, Yasuyuki, Single-point machining technology of a supersmooth surface using a flying tool: Nanotechnology v. 3 no. 1 Jan 1992 p. 1-5, 1992.

Eranki, J., Xiao, G., Malkin, S., Evaluating the performance of 'seeded gel' grinding wheels: Journal of Materials Processing Technology v. 32 no. 3 Aug 1992 p. 609-625, 1992.

Ershov, V.A., Vinogradov, V.E., Mechanism of surface layers fracture and formation of equilibrium roughness during friction process: Trenie i Iznos v. 13 no. 4 Jul-Aug 1992. p. 716-722, 1992.

Ertas, A., Carper, H. J., Blackstone, W. R., Development of a test machine and method for galling studies: Experimental Mechanics v. 32 no. 4 Dec 1992 p. 340-347, 1992.

Evtushenko, A.A., Ukhanskaya, O.M., The unsteady friction heating during sliding of elastic pressurized bodies: Prikladnaya Matematika i Mekhanika v. 56 no. 1 Jan-Feb 1992. p. 111-117, 1992.

Fadeev, A.F., Express-methods for estimating the effectiveness of lubricants used in hot metal deformation: Trenie i Iznos v. 13 no. 3 May-Jun 1992. p. 520-523, 1992.

Fang, C., Sill, B. L., Aerodynamic roughness length, Correlation with roughness elements: Journal of Wind Engineering and Industrial Aerodynamics v. 41 no. 1-3 Oct 1992. p. 449-460, 1992.

Fedosov, S.A., Quasistationary roughness in case of pulse laser treatment of steels: Trenie i Iznos v. 13 no. 2 Feb 1992. p. 356-362, 1992.

Fei, J., and Jawahir, I.S., A fuzzy knowledge-based system for predicting surface roughness in finish turning: 1992 IEEE International Conference on Fuzzy Systems, FUZZ-IEEE. Proc., IEEE, Piscataway, NJ, p. 899-906, 1992.

Fierro-Chavez, J. L., Duguid, T. P., Diagnostic techniques for the field evaluation of polymer concrete insulators: IEE Conference Publication no. 363. IEE, Michael Faraday House, Stevenage, UK, p. 146-149, 1992.

Findler, G., Muchow, J., Koch, M., Munzel, H., Temporal evolution of silicon surface roughness during anisotropic etching processes: Proc IEEE Micro Electro Mech Syst Workshop. IEEE, Piscataway, NJ, p. 62-66, 1992.

Fitzpatrick, S. M., Baharet, S., Michaelides, E. E., Model for the transport and deposition of particles in rivers: Measurement and Modeling of Environmental Flows - 1992 American Society of Mechanical Engineers, Fluids Engineering Division, FED v. 143. ASME, New York. p. 147-151, 1992.

Floryan, J. M., Yamamoto, K., Murase, T., Laminar-turbulent transition process in the presence of simulated wall roughness: Canadian Aeronautics and Space Journal v. 38 no. 4 Dec 1992 p. 173-182, 1992.

Fu, J., Young, R. D., and Vorburger, T. V., (1992) Long-range scanning for scanning tunneling microscopy: Reprinted from Review of Scientific Instruments 63, 42200-2205.

Fung, M. -T. R., Numerical computation of buoyancy-dominated heated upward gas flow along an artificially-rough cylinder at moderate reynolds numbers: Institution of Chemical Engineers Symposium Series v. 1 no. 129. Inst of Chemical Engineers, Rugby, UK p. 499-505, 1992.

Gallagher, M. W., Beswick, K. M., Choularton, T. W., Measurement and modelling of cloudwater deposition to a snow-covered forest canopy: Atmospheric Environment v. 26A no. 16 Nov 1992 p. 2893-2903, 1992.

Gardin, C., Lanchon-Ducauouis, H., Paulin, J. Saint Jean, Billerey, D., Debbabi, N., Platek, M., Mathematical approaches of thermal and thermoelastic contact: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 129-135, 1992.

Garimella, Suresh V., Schlitz, Daniel J., Enhanced internal cooling of turbine blades using large-scale roughness elements: Fundamental and Applied Heat Transfer Research for Gas Turbine Engines American Society of Mechanical Engineers, Heat Transfer Division, HTD v. 226 1992. ASME, New York. p. 9-15, 1992.

Garratt, J. D., Nettleton, D. J., Stylus instrument for roughness and profile measurement of ultra-fine surfaces: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 233-238, 1992.

Gavrilov, A.L., Dunin, S.Z., Maskomov, G.A., Scattering of scalar fields by hard and soft rough surfaces. Angular distribution of intensity: Akusticheskii Zurnal v. 38 no. 5 Sep-Oct 1992. p. 861-873, 1992.

Gerasimova, T.I., Danilov, A.V., Kondrat'ev, V.N., Kocharyan, G.G., Influence of roughness on the fracture stability under dynamic effect: Fiziko-Tekhnicheskie Problemy Razrabotki Poleznykh Iskopaemykh no. 2 Mar-Apr 1992. p. 71-77, 1992.

Gevorkyan, S. G., Kalantarova, Zh. Kh., Design of embankments protecting against tsunami having a frontal surface of complex form: Gidrotekhnicheskoe Stroitel'stvo no. 5 May 1992 p. 19-21, 1992.

Ghosh, Subhas, Rodgers, James E., Ortega, Albert E., RotorRing measurement of fiber cohesion and bulk properties of staple fibers:

Textile Research Journal v. 62 no. 10 Oct 1992 p. 608-613, 1992.

Gilley, John E., Kottwitz, Eugene R., Wieman, Gary A., Darcy-Weisbach roughness coefficients for selected residue materials: Irrigation and Drainage, Saving a Threatened Resource - In Search of Solutions, Proceedings of the Irrigation and Drainage Sessions at Water Forum '92. ASCE, New York. p. 481-486, 1992.

Gnanamoorthy, R., Gopinath, K., Surface durability studies on as sintered low alloy steel gears: Non-Ferrous Materials Advances in Powder Metallurgy v. 6. Metal Powder Industries Federation, Princeton, NJ. p. 237-250, 1992.

Gomez-Rodriguez,.M., senjo., Salvarezza, R.C., Baro, A.M., Measuring the fractal dimension with STM, application to vacuum-evaporated gold: Ultramicroscopy, vol.42-44, pt.B, p. 1321-8, July 1992.

Gorbach, N.V., Mikhajlovskij, A.I., Bearing fluctuational spectra of a low-altitude source moving over rough surface: Izvestiya VUZ, Radiofizika v. 35 no. 3-4 Mar-Apr 1992. p. 264-274, 1992.

Gorccki, C., Interferogram analysis using a Fourier transform method for automatic 3D surface measurement: Pure and Applied Optics, Journal of the European Optical Society Part A v. 1 no. 2 Mar 1992 p. 103-110, 1992.

Gottschalk, G., Fries, Th., Becker, C., Wandelt, K., Problems of roughness measurements using STM: Ultramicroscopy v. 42-44 no. Part B Jul 1992. p. 1403-1411, 1992.

Greenwood, J. A., Contact of rough surfaces: 37-56 in I. L. Singer & H. M. Pollock eds., Fundamentals of friction, macroscopic & microscopic processes, Kluwer, Dordrecht (1992).

Greenwood, J. A., Problems with rough surfaces: 57-76 in I. L. Singer & H. M. Pollock eds., Fundamentals of friction, macroscopic & microscopic processes, Kluwer, Dordrecht (1992).

Griffith, .J.E., Grigg, .A., Vasile, M.J., Russell, P.E., and Fitzgerald, E.A., Scanning probe metrology: Journal of Vacuum Science & Technology A (Vacuum, Surfaces, and Films), vol.10, no.4, pt.1, p. 674-9, July-Aug. 1992.

Grigg,.A., Griffith, J.E., Kochanski, G.P., Vasile, M.J., and Russell, P.E., Scanning probe metrology: Proceedings of the SPIE - The International Society for Optical Engineering, vol.1673, p. 557-67, 1992.

Grigg,.A., Russell, P.E., Griffith, J.E., Vasile, M.J., and Fitzgerald, E.A., Probe characterization for scanning probe metrology: Ultramicroscopy, vol.42-44, pt.B, p. 1616-20, July 1992.

Griggs, E.I., Khodabakhsh-Sharifabad, F., Flow characteristics in rectangular ducts: ASHRAE Transactions v. 98 pt 1 1992. ASHRAE, Atlanta, GA, p. 116-127, 1992.

Gronostajski, J. Z., Zimniak, Z., Effect of changing of heterogeneity with strain on the forming limit diagram: Journal of Materials Processing Technology v. 34 no. 1-4 Sep 1992. p. 457-464, 1992.

Gu, Tong, Infrared surface electromagnetic wave technique: Hongwai Jishu/Infrared Technology v. 14 no. 6 Dec 3 1992 p. 35-37, 18, 1992.

Gurnagul, N., Ouchi, M. D., Dunlop-Jones, N., Sparkes, D. G., Wearing, J. T., Factors affecting the coefficient of friction of paper: Journal of Applied Polymer Science v. 46 no. 5 Oct 15 1992 p. 805-814, 1992.

Gusella, V., Spinelli, P., Bartoli, G., Aeolian geographical information system for civil engineering: Journal of Wind Engineering and Industrial Aerodynamics v. 41 no. 1-3 Oct 1992. p. 497-506, 1992.

Gyenes, L., Mitchell, C.G.B., Philipps, S.D., Dynamic pavement loads and tests of road-friendliness for heavy vehicle suspensions: SAE Technical Paper Series 1992. SAE, Warrendale, PA, p. 1-12 922464, 1992.

# 1992 H-M

Hagen, L. J., Armbrust, D. V., Aerodynamic roughness and saltation trapping efficiency of tillage ridges: Transactions of the ASAE v. 35 no. 4 Jul-Aug 1992 p. 1179-1184, 1992.

Han, Yi, Hoshi, Tetsutaro, Fundamentals for vibration diagnosis by ground surface marks: JSME International Journal, Series 3, Vibration, Control Engineering, Engineering for Industry v. 35 no. 2 Jun 1992 p. 301-306, 1992.

Handzel-Powierza, Z., Klimczak, T., Polijaniuk, A., On the experimental verification of the Greenwood-Williamson model for the contact of rough surfaces: Wear, vol.154, no.1, p. 115-24, 15 April 1992.

Hanrieder, W., Mock, R., Meixner, H., The whip motion of ultra-thin tunneling tips: Ultramicroscopy, vol.42-44, pt.A, p. 169-76, July 1992.

Harding, Kevin G., Laser scatter surface finish measurement techniques: LIA (Laser Institute of America) v. 73. Laser Inst of America, Toledo, OH, p. 125-135, 1992.

Hashish, M., Modeling study of jet cutting surface finish: Precision Machining, Technology and Machine Development and Improvement American Society of Mechanical Engineers, Production Engineering Division, PED v. 58 1992. ASME, New York. p. 151-167, 1992.

Hatanaka, K., Fujimitsu, T., Inoue, H., Measurement of three-dimensional strains around a creep-crack tip: Experimental Mechanics v. 32 no. 3 Sep 1992 p. 211-217, 1992.

Hawkes, P.W., Electron image processing—1981-1990: Journal of Computer-Assisted Microscopy, v. 4, no. 1, p. 1-72., (1992). [a 2325-item bibliography]

Hayward, I. P, Singer, I. L, Seitzman, L. E, Effect of roughness on the friction of diamond on CVD diamond coatings: Wear, v. 157 no. 2 Sep 15 1992 p. 215-227, 1992.

Heijnen, J. J., van Loosdrecht, M. C. M., Mulder, A., Tijhuis, L., Formation of biofilms in a biofilm air-lift supension reactor: Water Science and Technology v. 26 no. 3-4 1992. p. 647-654, 1992.

Hernandez Creus, A., Carro, P., Gonzalez, S., Salvarezza, R.C., Arvia, A.J., A new electrochemical method for determining the fractal dimension of the surface of rough metal electrodeposits. Its application to dendritic silver surfaces: Journal of the Electrochemical Society vol.139, no.4 p. 1064-70, April 1992.

Hiesgen, R., Meissner, D., Problems of roughness measurements using STM: Ultramicroscopy, vol.42-44, pt.B, p. 1403-11, July 1992.

Hiesgen, Renate, Meissner, Dieter, Scanning tunneling microscopy studies of organic and inorganic materials for photovoltaics and photoelectrochemistry: Proceedings of SPIE - The International Society for Optical Engineering v. 1729. Bellingham, WA, p. 207-217, 1992.

Higuchi, Shizuichi, Akao, Shigeru, Saito, Yoshio, Hanaoka, Tadaaki, Finishing of cylindrical surfaces by using lapping films: Journal of the Japan Society of Precision Engineering/Seimitsu Kogaku Kaishi v. 58 no. 10 Oct 1992 p. 1697-1703, 1992.

Hirohata, Y., Nemoto, Y., Hino, T., Yamashina, T., Influence of preparation conditions on the surface roughness of SiC thin films coated on 304 stainless steel: Thin Solid Films v. 214 no. 2 Jul 15 1992 p. 150-155, 1992.

Honda, A., Goktepe, M., Derebasi, N., Meydan, T., Moses, A. J., Effect of surface roughness and tension on dynamic domain motion in grain oriented 3% silicon iron: Journal of Magnetism and Magnetic Materials v. 112 no. 1-3 Jul 1 1992. p. 20-22, 1992.

Honda, Yukio, Hosaka, Sumio, Kikugawa, Atsushi, Tanaka, Shinji, Matsuda, Yoshibum, Suzuki, Mikio, Futamoto, Masaaki, Magnetic force microscope using an optical lever sensor and its application to longitudinal recording media: Japanese Journal of Applied Physics, Part 2, Letters v. 31 no. 8A Aug 1 1992 p. L1061-L1064, 1992.

Hu, Y. Z., Tonder, K., Simulation of 3-D random rough surface by 2-D digital filter and Fourier analysis: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 83-90, 1992.

Huang, Dongzhou, Wang, Ton-Lo, Shahawy, Mohsen, Impact analysis of continuous multigirder bridges due to moving vehicles: Journal of Structural Engineering v. 118 no. 12 Dec 1992 p. 3427-3443, 1992.

Hunter, L.J., Johnson, G.T., Watson, I.D., Investigation of three-dimensional characteristics of flow regimes within the urban canyon: Atmospheric Environment, Part B, Urban Atmosphere v. 26B no. 4 Dec 1992. p. 425-432, 1992.

Ibrahim, Raouf A., Friction-induced vibration, chatter, squeal, and chaos, Part I - Mechanics of friction: Friction-Induced Vibration, Chatter, Squeal, and Chaos: American Society of Mechanical Engineers, Design Engineering Division, DE v. 49. ASME, New York. p. 107-121, 1992.

for Industry, Transactions of the ASME v. 114 no. 4 Nov 1992 p. 421-426, 1992.

Ichida, Yoshio, and Kishi, Kozo, Nano-topography of ultra-precision ground surface of silicon nitride ceramics using atomic force microscope: Journal of the Japan Society of Precision Engineering/Seimitsu Kogaku Kaishi v. 58 no. 9 Sep 1992. p. 1569-1574.

Imre, A., Pajkossy, T., Nyikos, L., Electrochemical determination of the fractal dimension of fractured surfaces: Acta Metallurgica et Materialia, vol.40, no.8, p. 1819-26, Aug. 1992.

Ipatov, Yu. P., Trubitsyna, M. V., Dzhetymov, A. M., Fedosova, S. V., Tomenko, N. Ya., Investigations of properties of oxide insulation coatings on winding conductors of large sections containing A999 Al: Elektrotekhnika no. 8-9 Aug-Sep 1992 p. 48-50, 1992.

Isaev, D.G., Isaev, G.S., Serova, N.A., Patrushev, L.M., Shkrob, V.N., Plasma coatings of chills for magnesium castings: Liteinoe Proizvodstvo no. 3 Mar 1992. p. 19-20, 1992.

Ishibashi, Akira, and Sonoda, Keiji, Mirrorlike finishing of precision rollers and changes on the roller surfaces caused by loaded running: JSME International Journal, Series 3, Vibration, Control Engineering, Engineering for Industry v. 35 no. 2 Jun 1992 p. 286-293, 1992.

Itabashi, Sei-ichi, Yoshihara, Hideo, Surface evaluation of ultrathin platinum films: Thin Solid Films v. 221 no. 1-2 Dec 10 1992 p. 79-88, 1992.

Itoh, Noriaki, Tsukada, Tadao, Fractal analysis of three-dimensional engineering surface irregularities: Journal of the Japan Society of Precision Engineering/Seimitsu Kogaku Kaishi v. 58 no. 7 Jul 1992 p. 1179-1184.

Itoh, Noriaki, Tsukada, Tadao, Sasajima, Kazuyuki, Properties of engineering surface irregularities based on fractal dimension (2nd report) - analysis by power spectral density function: Journal of the Japan Society of Precision Engineering/Seimitsu Kogaku Kaishi v. 58 no. 10 Oct 1992 p. 1735-1740.

Jacobson, R.D., Wilson, S.R., Al-Jumaily, G.A., McNeil, J.R., Bennett, J.M. and Mattsson, L., Microstructure characterisation by angle-resolved scatter and comparison to measurements made by other techniques: Applied Optics, 31, 10, p. 1426-1435 (April 1992).

Jacquemoud, S., Baret, F., Hanocq, J. F., Modeling spectral and bidirectional soil reflectance: Remote Sensing of Environment v. 41 no. 2-3 Aug-Sep 1992 p. 123-132, 1992.

Jankowski, Alan F., Improvement in the synthesis of Ni/Ti neutron mirrors: Proceedings of SPIE - The International Society for Optical Engineering v. 1738 1992. Bellingham, WA, p. 10-21, 1992.

Jawahir, I.S., Qureshi, N., Arsecularatne, J.A., Interrelationships of some machinability parameters in finish turning with cermet chip forming tool inserts: International Journal of Machine Tools & Manufacture v. 32 no. 5 Oct 1992. p. 709-723, 1992.

Jeng, Yeau-Ren, Lalonde, Giles A., 3-D surface topography measurement system and its applications: SAE Special Publications no. 936. SAE, Warrendale, PA, 922347. p. 175-182, 1992.

Jossang, T., Feder, J., The fractal characterization of rough surfaces: Physica Scripta, Volume T, vol.T44, p. 9-14, 1992.

Kaminska, Anna Maria, Ellipsometric measurements of surface roughness of silicon wafers: Electron Technology (Warsaw) v. 25 no. 1-4 1992. p. 43-57, 1992.

Kanayama, Kouzou, Yoshioka, Kouzi, Shigematsu, Ichinori, Kozuka, Teruyuki, Tube reducing of welded titanium tube by using planetary ball die: Keikinzoku/Journal of Japan Institute of Light Metals v. 42 no. 11 Nov 1992 p. 657-662, 1992.

Kaneta, Motohiro, Effects of surface roughness in elastohydrodynamic lubrication: JSME International Journal, Series 3, Vibration, Control Engineering, Engineering for Industry v. 35 no. 4 Dec 1992 p. 535-546, 1992.

Kang, H. C., Evans, J. W., Resolution of the photon scanning tunneling microscope, Influence of physical parameters: Ultramicroscopy v. 42-44 no. Part A Jul 1992. p. 422-429, 1992.

Kato, Kazuyoshi, Tokisue, Hiroshi, and Chiba, Isamu, Effect of side cutting edge angle of tools on the turning machinability of magnesium alloy castings MC2: Keikinzoku/Journal of Japan Institute of Light Metals v. 42 no. 8 Aug 1992 p. 453-458, 1992.

Kelly, D.A., Barnes, C.G., Freeman, R.W.; Critchlow, G.W., Running-in and the enhancement of scuffing resistance: Proceedings of the Institution of Mechanical Engineers, Part C, Mechanical Engineering Science v. 206 no. 6 1992. p. 425-429, 1992.

Keribar, Rifat, and Dursunkaya, Zafer, Modeling of piston secondary dynamics and tribology: Proceedings - Society of Automotive Engineers no. P-256. SAE, Warrendale, PA, p. 657-677, 1992.

Khan, Jamal, Lapping and polishing process to achieve high quality alumina surfaces for applications in device fabrication: Thin Solid Films v. 220 no. 1-2 Nov 20 1992. p. 222-226, 1992.

Khomenko, N.N., Lysenko, S. Yu., Effect of polishing on glass surface properties: Fizika i Khimiya Obrabotki Materialov no. 3 May-Jun 1992. p. 99-104, 1992.

Ki, Soo Kim, Dai, Gil Lee, Yoon, Keun Kwak, Suk, Namgung, Machinability of carbon fiber-epoxy composite materials in turning: Journal of Materials Processing Technology v. 32 no. 3 Aug 1992 p. 553-570, 1992.

Kiely, Aaron B., Lettieri, Thomas R., Vorburger, Theodore V., Model of an optical roughness-measuring instrument: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 33-35, 1992.

Kim, D. E., Suh, N. P., Chemical smoothing of rough metal surfaces: Journal of Engineering

Kitajima, K., Cai, G. O., Kumagai, N., Tanaka, Y., Study on mechanism of ceramics grinding: CIRP Annals v. 41 no. 1 1992 p. 367-371, 1992.

Kiyono, Satoshi, Suzuki, Hiroshi, Xuechuan, Shan, Kamada, Osamu, Development of a scanning tunneling microscope for surface roughness measurement - trial of a skid-type STM: Journal of the Japan Society of Precision Engineering/Seimitsu Kogaku Kaishi v. 58 no. 9 Sep 1992. p. 1509-1514.

Klimczak, T., Origins, magnitude and statistical significance of differences between roughness parameters of two- and three-dimensional characteristics: Wear v. 156 no. 1 Jul 15 1992 p. 19-31, 1992.

Klimczak, T., and Kaczmarek, J., Predicting microcontact spots size distribution in contact problems: CIRP Annals v. 41 no. 1 1992 p. 609-612, 1992.

Kobayashi, Yoshio, Kayano, Hiroyuki, An improved dielectric resonator method for surface impedance measurement of high-T//c superconductors: IEEE MTT-S International Microwave Symposium Digest v. 2. IEEE, Piscataway, NJ, p. 1031-1034, 1992.

Koh, Yang-Moon, Turbulent flow near a rough wall: Journal of Fluids Engineering, Transactions of the ASME v. 114 no. 4 Dec 1992 p. 537-542, 1992.

Kohzaki, M., Higuchi, K., Noda, S., Uchida, K., Tribological characteristics of polycrystalline diamond films produced by chemical vapor deposition: Journal of Materials Research v. 7 no. 7 Jul 1992 p. 1769-1777, 1992.

Komla, A., Traverse, J.P., Study of the texture of conversion coatings with specific optical or catalytic properties. I. Influence of the type of substrate: Thin Solid Films, vol.207, no.1-2, p. 206-12, 30 Jan. 1992.

Konyha, K. D., Skaggs, R. W., Coupled, field hydrology - open channel flow model, Theory: Transactions of the ASAE v. 35 no. 5 Sep-Oct 1992 p. 1431-1440, 1992.

Korobeynikov, S. M., Bubble model of pulse breakdown in liquids: IEE Conference Publication no. 363. Publ by IEE, Michael Faraday House, Stevenage, UK, p. 500-503, 1992.

Korotkevich, A.V., Kostyuchenko, S.A., On the regularities of the microrelief changes of an anodically oxidized aluminium surface: Zashchita Metallov no. 3 Mar 1992. p. 488-490, 1992.

Kouwen, N., Modem approach to design of grassed channels: Journal of Irrigation and Drainage Engineering v. 118 no. 5 Sep-Oct 1992 p. 733-743, 1992.

Kovacevic, R., Zhang, Y. M., Identification of surface characteristics from large samples: Proceedings of the Institution of Mechanical Engineers, Part C, Mechanical Engineering Science v. 206 no. 4 1992 p. 275-284, 1992.

Kozaitis, Samuel P., Cofer, Rufus H., Optical estimation of fractal dimension for image assessment: Proceedings of SPIE - The

International Society for Optical Engineering v. 1702. Bellingham, WA, p. 186-191, 1992.

Krolikowski, J., Szczepek, J., Phase shift of the reflection coefficient of ultrasonic waves in the study of the contact interface: Wear, vol.157, no.1, p. 51-64, 4 Aug. 1992.

Krukar, Richard H., Gaspar, Susan M., Wilson, Scott R., Hush, Don R., Naqvi, S. Sohail H., McNeil, John R., Wafer examination and critical dimension estimation using scattered light: Proceedings of SPIE - The International Society for Optical Engineering v. 1661. Bellingham, WA, p. 323-332, 1992.

Kulikov, A. I., Self-lubricating and self-strengthening moulds: Steklo i Keramika no. 10 Oct 1992 p. 27, 1992.

Kuljanic, Elso, Macro plastic deformation of cutting edge. A method for maximum utilization of cutting tool: CIRP Annals v. 41 no. 1 1992 p. 151-154, 1992.

Kurita, Masanori, Sato, Makoto, Nakano, Kazuma, Technique for rapidly measuring surface roughness using a laser: JSME International Journal, Series 1, Solid Mechanics, Strength of Materials v. 35 no. 3 Jul 1992 p. 335-339, 1992.

Kweh, C. C., Patching, M. J., Evans, H. P., Snidle, R. W., Use of profile data in simulation of lubrication of real surfaces: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 75-81, 1992.

Kweh, C.C., Patching, M.J., Evans, H.P. and Snidle, R.W., Simulation of Elastohydrodynamic contacts between rough surfaces: J. of Trib., ASME, 114, p. 412-419 (July 1992).

Lai, J. L., Lo, K. S. L., Modelling of solute transfer to surface runoff: Water Science and Technology v. 26 no. 7-8 1992. p. 1851-1856, 1992.

Lance, B. J., Sadeghi, F., Normal approach and stick-slip phenomena at the interface of two rough bodies: American Society of Mechanical Engineers (Paper). ASME, New York, 92-Trib-25. p. 1-8, 1992.

Lazarov, M., Brunotte, A., Eisenhammer, Thomas, Sizmann, R., Graf, Wolfgang, Wittwer, Volker, Effects of roughness on TiNxOy-Cu selective absorbers: Proceedings of SPIE - The International Society for Optical Engineering v. 1727. Bellingham, WA, p. 34-45, 1992.

Lee, S. C., Interfacial friction factors in countercurrent stratified two-phase flow: Chemical Engineering Communications v. 118 1992 p. 3-16, 1992.

Lee, Young-Jin, Manas-Zloczower, Ica, Feke, Donald L., Characterization of solvent interactions with treated titanium dioxide powders: Powder Technology v. 73 no. 2 Dec 1 1992. p. 139-146, 1992.

Lefebvre, Yves, Lacelle, Serge, Jolicoeur, Carmel, Surface fractal dimensions of some industrial minerals from gas-phase adsorption isotherms: Journal of Materials Research v. 7 no. 7 Jul 1992 p. 1888-1891, 1992.

Leistner, A.J., Thwaite, E.G., Lesha, F. and Bennett, J.M., Polishing study using Teflon and pitch laps to produce flat and supersmooth surfaces: Applied Optics, 31, 10, p. 1472-1482 (April 1992).

Liang, Steven Y., Perry, Stephen A., Milling cutter runout compensation by control of radial depth of cut: Flexible Automation 1992 Proc 92 Jpn USA Symp Flexible Autom. ASME, New York. p. 861-864, 1992.

Lin, Jen Fin, Wang, Lien Yu, Huang, Tsai-Kun, Friction in deep drawing of aluminium sheet: Wear v. 156 no. 1 Jul 15 1992 p. 189-199, 1992.

Litovka, V.I., Bubnov, M.I., Liteinoe Proizvodstvo no., Effect of cleanliness of cast surface on the mechanical properties of strength cast iron: 4 Apr 1992. p. 4-5, 1992.

Lloyd, D. G., Stevenson, M. G., Investigation of floor surface profile characteristics that will reduce the incidence of slips and falls: Mechanical Engineering Transactions - Institution of Engineers, Australia v. ME17 no. 2 Sep 1992 p. 99-105, 1992.

Lo, Sy-Wei, On the effects of roughness orientation - a mapping and double scale analysis of flow factors: Journal of Tribology, Transactions of the ASME v. 114 no. 4 Oct 1992 p. 747-754, 1992.

Lukhvich, A.A., Novikov, S.A., Khil'ko, G.I., Acoustic laboratory scanning microscope: Defektoskopiya no. 11 Nov 1992. p. 36-42, 1992.

Luk'yanov, V.S., Solovejchik, V.R., Bykov, A.M., On determination of probability characteristics of composite surface microgeometry: Problemy Prochnosti i Nadezhnos'ti Mashin no. 6 Nov-Dec 1992. p. 54-59, 1992.

Lundberg, Jan, Ostensen, Jan Ove, Astrom, Henrik, High-speed video photographs of lubrication breakdown in squeeze-sliding contact: Wear v. 157 no. 2 Sep 15 1992 p. 427-433, 1992.

Luo, Ming, Zhao, Xinan, Zhang, Xi, Tan, Songsheng, Wang, Weiyuan, Procedure and mechanism of electrostatic sealing: Bandaoti Xuebao/Chinese Journal of Semiconductors v. 13 no. 8 Aug 1992 p. 507-510, 1992.

Ma, Pinzhong, Testing methods for optimum selecting cleaning agent for mirror: Guangxue Jishu/Optical Technique no. 3 May 20 1992. p. 6-10, 1992.

Maeno, Takashi, Bogy, David B., Effect of the hydrodynamic bearing on rotor/stator contact in a ring-type ultrasonic motor: IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control v. 39 no. 6 Nov 1992 p. 675-682.

Majkrzak, Charles F., Ankner, John F., Supermirror neutron guide coatings: Proceedings of SPIE - The International Society for Optical Engineering v. 1738 1992. Bellingham, WA, p. 150-158, 1992.

Mandak, Josef, Device working on the light principle for surface-roughness measurement: Proceedings of SPIE - The International Society for Optical Engineering v. 1776 1992. Bellingham, WA, p. 158-164, 1992.

Manninen, A. T., Effects of ice ridge properties on calculated surface backscattering in BEPERS-88: International Journal of Remote Sensing v. 13 no. 13 Sep 10 1992 p. 2469-2487, 1992.

Marcondes, Jorge, Singh, S. Paul, Use of road roughness to predict vertical acceleration in truck shipments: Advances in Electronic Packaging - 1992 American Society of Mechanical Engineers, EEP v. 2. ASME, New York. p. 999-1004, 1992.

Marui, Etsuo, Hashimoto, Masatoshi, Kato, Shinobu, Kojima, Wataru, Dissipation of kinematic energy by slip at the interface of mating surfaces: Wear v. 159 no. 1 Nov 2 1992 p. 141-150, 1992.

Matsui, Shinji, Baba, Masakazu, Satoh, Akinobu, Atomic layer etching and sidewall roughness measurement using the scanning tunneling microscope: Nanotechnology v. 3 no. 3 Jul 1992. p. 156-160, 1992.

Matsuo, T., Oshima, E., Investigation on the optimum carbide content and machining condition for wire EDM of zirconia ceramics: CIRP Annals v. 41 no. 1 1992 p. 231-234, 1992.

Matsuzaki, Yoshio, Hosokawa, Kazuo, Funabashi, Koichi, Effect of surface roughness on contact pressure of static seals: JSME International Journal, Series 3, Vibration, Control Engineering, Engineering for Industry v. 35 no. 3 Sep 1992 p. 470-476, 1992.

Matsuzawa, Kazuo, Nagai, Shuji, Saga, Tsuneo, Kojima, Yo, Cutting mechanism of Mg-Li-Al alloys: Keikinzoku/Journal of Japan Institute of Light Metals v. 42 no. 12 Dec 1992. p. 779-783, 1992.

Mazur, V. L., Zalkind, Yu. A., Tsurkan, V. A., Effect of tension flex levelling on mechanical properties and formability of sheet steel: Stal' no. 9 Sep 1992 p. 43-46, 1992.

McLean, John W., Graham, Aly, Effects of ocean waves on remote imaging sensors: Proceedings of SPIE - The International Society for Optical Engineering v. 1749 1992, p. 84-93, 1992.

McWaid, T.H., Marschall, E., Application of the modified Greenwood and Williamson contact model for the prediction of thermal contact resistance: Wear, vol.152, no.2, p. 263-77, 31 Jan. 1992.

Mecholsky, J.J., Jr., Plaia, J.R., Fractal analysis on fracture surfaces of glass using replication techniques: Journal of Non-Crystalline Solids, vol.146, no.2-3, p. 249-55, Sept. 1992.

Melkonyan, G.I., Stepanov, A.I., Determination of flow friction in winter: Meteorologiya i Gidrologiya no. 6 Jun 1992. p. 76-83, 1992.

Melkote, S.N., Thangaraj, A.R., Enhanced surface texture model for end milling: Engineered Surfaces American Society of Mechanical Engineers, Production Engineering Division, PED v. 62 1992. ASME, New York. p. 161-177, 1992.

Mengen, D., Weck, M., How to ensure precise analysis of gear surfaces and diagnosis of changes during operation: Advancing Power Transmission Into the 21st Century Proc 92 Int Power Transm Gearing Conf., American Society of Mechanical Engineers, Design Engineering Division, DE v. 43 pt 2. ASME, New York. p. 605-612, 1992.

Metzger, D.E., Fan, C.S., Heat transfer in pin fin arrays with jet supply and large alternating wall roughness ribs: Fundamental and Applied Heat Transfer Research for Gas Turbine Engines American Society of Mechanical Engineers, Heat Transfer Division, HTD v. 226 1992. ASME, New York. p. 23-30, 1992.

Michalski, J., Pawlus, P., Description of the bearing length curve of the inner surface of piston engine cylinders: Wear v. 157 no. 2 Sep 15 1992 p. 207-214, 1992.

Mickaily, Elizabeth S., Middleman, Stanley, Allen, Merry, Viscous flow over periodic surfaces: Chemical Engineering Communications v. 117 1992 p. 401-414, 1992.

Mikhin, N.M., Makushkin, S.A., Calculation of the closeness value in the sliding bearing with the wear autocompensation: Trenie i Iznos v. 13 no. 3 May-Jun 1992. p. 413-420, 1992.

Mirzamaani, Mohammad, Jahnes, Christopher V., Russak, Michael A., Thin film disks with transient metal underlayers: IEEE Transactions on Magnetics v. 28 no. 5 pt 2 Sep 1992. p. 3090-3092, 1992.

Miyashita, M., Tusga, T., Makihara, K., Ohmi, T., Dependence of surface microroughness of CZ, FZ, and EPI wafers on wet chemical processing: Journal of the Electrochemical Society v. 139 no. 8 Aug 1992 p. 2133-2142, 1992.

Mizoh, Y., Yohda, H., Kaminaka, N., Kotera, H., Kita, H., Analysis of tape floating behaviour on magnetic head and grooved drum in VCR: Industrial and Environmental Applications of Fluid Mechanics American Society of Mechanical Engineers, Fluids Engineering Division, FED v. 145. ASME, New York. p. 151-156, 1992.

Mohamoud, Yusuf M., Evaluating Manning's roughness coefficients for tilled soils: Journal of Hydrology v. 135 no. 1-4 Jul 1992 p. 143-156, 1992.

Mohri, Naotake, Higashi, Masatake, Shin, Toshiyuki, Saito, Nagao, Automatic process for manufacturing free-form surface by electrical discharge machining: Journal of the Japan Society of Precision Engineering/Seimitsu Kogaku Kaishi v. 58 no. 4 Apr 1992 p. 667-672.

Montaner, Denis, Montgomery, Paul C., Andre, Eric, Surface defect analysis of semiconductor materials and devices using nanoscopy techniques: Proceedings of SPIE - The International Society for Optical Engineering v. 1776 1992, p. 34-45, 1992.

Müller, B.R., Feldhaus, J., Schäfers, F. and Eggenstein, F., Cleaning of carbon contaminated vacuum ultraviolet-optics, Influence on surface roughness and reflectivity: Am. Inst. of Physics, Rev. Sci. Instrum., 63, 1, p. 1428-1431 (January 1992).

Muraleedharan, T. M., Meletis, E. I., Surface modification of pure titanium and Ti-6Al-4V by intensified plasma ion nitriding: Thin Solid Films v. 221 no. 1-2 Dec 10 1992 p. 104-113, 1992.

# 1992 N-Z

Nalluri, Chandra, Kithsiri, M. M. A. U., Extended data on sediment transport in rigid bed rectangular channels: Journal of Hydraulic Research v. 30 no. 6 1992 p. 851-856, 1992.

Namba, Y., Yamada, Y., Tsuboi, A., Unno, K., Nakao, H., Inasaki, I., Surface structure of Mn-Zn ferrite single crystals ground by an ultraprecision surface grinder with various diamond wheels: CIRP Annals v. 41 no. 1 1992 p. 347-351, 1992.

Naot, Dan, Nezu, Iehisa, Nakagawa, Hiroji, Numerical calculation of three-dimensional turbulent flow in compound rectangular open channels: Memoirs of the Faculty of Engineering, Kyoto University v. 54 pt 2 Apr 1992 p. 49-82, 1992.

Negm, Sohair, Talaat, Hassan, Radiative and non-radiative decay of surface plasmons in thin metal films: Solid State Communications v. 84 no. 1-2 Oct 1992 p. 133-137, 1992.

Niwa., Iwasaki, H., Watanabe, Y., Sumita, I., Akutsu, N., Akutsu, Y., Statistical properties of atomic-scaleSi/SiO/sub 2/ interface roughness studied by STM: Applied Surface Science, vol.60-61, p. 39-44, Aug. 1992.

Noguchi, M., Kembo, Y., Particle inspection on bare wafer by side-scattering light detection: Conference on Solid State Devices and Materials. Acad Soc Japan, Tokyo, Japan. p. 701-702, 1992.

O'Connor, R. F., Spedding, T. A., Use of a complete surface profile description to investigate the cause and effect of surface features: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 147-154, 1992.

Oden, P. I., Majumdar, A., Bhushan, B., Padmanabhan, A., Graham, J.J., AFM imaging, roughness analysis and contact mechanics of magnetic tape and head surfaces: Journal of Tribology, Transactions of the ASME v. 114 no. 4 Oct 1992 p. 666-674, 1992.

Okamoto, Tatsuki, Hozumi, Naohiro, Ishida, Masayosh, Breakdown strength affected by the interface roughness at the semiconducting layer in XLPE power cables: Proc 3 Int Conf Prop Appl Dielectr Mater. IEEE, Piscataway, NJ, p. 127-130, 1992.

Omstedt, Anders, Svensson, Urban, On the melt rate of drifting ice heated from below: Cold Regions Science and Technology v. 21 no. 1 Sep 1992 p. 91-100, 1992.

Osanna, P. H., Totewa, P., Workpiece accuracy. The critical path to economical production: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 45-49, 1992.

Ougiya, Yasuhiko, Ariura, Yasutsune, Nakanishi, Tsutomu, Fundamental study of the surface durability of medium-hardness gears (Effects of combination of hardness and surface roughness): JSME International Journal, Series 3, Vibration, Control Engineering, Engineering for Industry v. 35 no. 4 Dec 1992 p. 633-640, 1992.

Owen, I., Barrow, H., Simple method for predicting turbulent annular flow and heat transfer: Heat and Technology v. 10 no. 1-2 1992 p. 142-159, 1992.

Parsons, F. G., Tabenkin, A. N., Theory and development of user-friendly software for the measurement of surface roughness and geometrical parameters: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 255-262, 1992.

Pecorari, C., Mendelsohn, D. A., Blaho, G., Adler, L., Investigation of ultrasonic wave scattering by a randomly rough solid-solid interface: Journal of Nondestructive Evaluation v. 11 no. 3-4 Dec 1992 p. 211-220, 1992.

Peri, L., Gates, A., Scrutton, R. F., Devgun, M. S., Geometric quality of end mills and the surfaces which they produce: Microtecnic no. 3 1992 p. 56-58, 1992.

Persson, Ulf, Real time measurement of surface roughness on ground surfaces using speckle-contrast technique: Optics and Lasers in Engineering v. 17 no. 2 1992 p. 61-67, 1992.

Peters, Klaus, Eiden, Reiner, Modelling the dry deposition velocity of aerosol particles to a spruce forest: Atmospheric Environment v. 26A no. 14 Oct 1992 p. 2555-2564, 1992.

Petit, Michel, Stretta, Jean-Michel, Farrugio, Henri, Wadsworth, Alain, Synthetic aperture radar imaging of sea surface life and fishing activities: IEEE Transactions on Geoscience and Remote Sensing v. 30 no. 5 Sep 1992 p. 1085-1089, 1992.

Pike, John N., Rapid surface roughness measurements of coarse objects: Proceedings of SPIE - The International Society for Optical Engineering v. 1776 1992. Bellingham, WA, p. 23-33, 1992.

Poon, C.Y. and Sayles, R.S., The classification of rough surface contacts in relation to tribology: J. Phys. D, Appl. Phys., 25, p. A249-A256 (1992).

Poon, C.Y., Sayles, R.S., Jones, T.A., Surface measurement and fractal characterization of naturally fractured rocks: Journal of Physics D (Applied Physics) vol.25, no.8 p. 1269-75, 14 Aug. 1992.

Popov, V.G., How real wetting conditions influence hysteresis of the edge angle of drops: Teplofizika Vysokikh Temperatur v. 30 no. 5 Sep-Oct 1992. p. 915-923, 1992.

Potter, David, Hannay, Ross, Cairney, Peter, Makarov, Alex, Investigation of car users' perceptions of the ride quality of roads: Road and Transport Research v. 1 no. 1 Mar 1992. p. 6-27, 1992.

Pynn, Roger, Diffuse neutron scattering signatures of rough films: Proceedings of

SPIE - The International Society for Optical Engineering v. 1738 1992. Bellingham, WA, p. 270-281, 1992.

Qiu, Y., Xiao, F. L., Dielectric strength of SF//6, SF//6/N//2 and SF//6/CO//2 under different electrode surface conditions: IEE Conference Publication no. 363. IEE, Michael Faraday House, Stevenage, UK, p. 186-189, 1992.

Rangaraj, S. S., Anderson, M. J., Stock, Dave E., Near-wake characteristics of 2-D obstacles in tandem in a simulated atmospheric boundary layer: Measurement and Modeling of Environmental Flows - 1992 American Society of Mechanical Engineers, Fluids Engineering Division, FED v. 143. ASME, New York. p. 1-12, 1992.

Rangel, C. M., Simplicio, M. H., Ferreira, M. G. S., Electrochemical impedance spectroscopy of plastically deformed mild steel: British Corrosion Journal v. 27 no. 3 1992 p. 237-240, 1992.

Rau, N., Fingerle, R., Huebner, G., Judgement of surface structures and changes in fuel-injection tubing by a pneumatic measuring method: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 227-232, 1992.

Ravigururajan, T.S., Bergles, A.E., Heat transfer enhancement of in-tube flow of water at low temperatures: American Society of Mechanical Engineers (Paper) 1992. ASME, New York. p. 1-7 92-WA/HT-3, 1992.

Reiss, G., and Bruckl, H., The influence of surface roughness on electronic transport in thin films: Surface Science, vol. 269-270, pt. B, p. 772-776, 15 May, 1992.

Riahi, D. N., Preferred patterns of convection in plane fluid layers: Bifurcation Phenomena and Chaos in Thermal Convection: Am. Soc. Mech. Engineers, HTD v. 214. ASME, New York. p. 69-72, 1992.

Roberts, A.D., Guide to estimating the friction of rubber: Rubber Chemistry and Technology v. 65 no. 3 Jul-Aug 1992. p. 673-686, 1992.

Rodic, Aleksandar D., Vukobratovic, Miomir K., Regulator of minimal variance in hybrid control strategy of manipulation robots: Proceedings - IEEE International Conference on Robotics and Automation v. 2. IEEE, Piscataway, NJ, p. 1232-1237, 1992.

Ronkainen, H., Ehrnsten, U., Zilliacus, R., Saarilahti, J., Mahiout, A., Hannula, S. -P., Investigation of some microstructural features related to corrosion initiation in titanium-aluminium nitride coated steel: Thin Solid Films v. 220 no. 1-2 Nov 20 1992. p. 160-165, 1992.

Rosenkranz, P. W., Rough-sea microwave emissivities measured with the SSM/I: IEEE Transactions on Geoscience and Remote Sensing v. 30 no. 5 Sep 1992 p. 1081-1085, 1992.

Roy, Donald W., Martin, Gay G. Jr: Advances in spinel optical quality, size/shape capacity, and applications: Proceedings of SPIE - The International Society for Optical Engineering v. 1760. Bellingham, WA, p. 2-13, 1992.

Rudzitis, J., Surface roughness topography investigations: Chemnitz, 8th Internationales Oberflächen Kolloquium, 1992, Proceedings, v. 2, p. 123-128.

Russ, J.C., Characterizing and modeling fractal surfaces: Journal of Computer-Assisted Microscopy, v. 4, no. 1, p. 73-126, (1992).

Sakakura, M., Inasaki, I., Neural network approach to the decision-making process for grinding operations: CIRP Annals v. 41 no. 1 1992 p. 353-356, 1992.

Sakurai, A., Shiotsu, M., Hata, K., Boiling heat transfer from a horizontal cylinder in liquid nitrogen: Heat Transfer and Superconducting Magnetic Energy Storage, Am. Soc. Mech. Engineers, HTD v. 211. ASME, New York. p. 7-18, 1992.

Sarabandi, K., Derivation of phase statistics from the Mueller matrix: Radio Science v. 27 no. 5 Sep-Oct 1992 p. 553-560, 1992.

Sasajima, K., Tsukada, T., Measurement of fractal dimension from surface asperity profile: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 125-127, 1992.

Sayed, Mohamed, Frederking, Robert M. W., Two-dimensional extrusion of crushed ice. Part 1, Experimental: Cold Regions Science and Technology v. 21 no. 1 Sep 1992 p. 25-36, 1992.

Scholl, D., Everson, M.P., Jaklevic, R.C., Shen, W., Improved scanning tunneling microscope feedback for investigation of surfaces with micron-scale roughness: Review of Scientific Instruments, vol.63, no.9, p. 4046-8, Sept. 1992.

Schreiter, S., Poll, H. -U., New plasma-etching technique for micromechanical structuring of quartz: Sensors and Actuators, A, Physical v. 35 no. 2 Dec 1992 p. 137-141, 1992.

Schuhmann, Rainer G., Schulz-Grosser, Michael, Froelich, Dieter, Mirror substrates for high-power YAG lasers: Proceedings of SPIE - The International Society for Optical Engineering v. 1752. Bellingham, WA, p. 260-263, 1992.

Scott, Paul J., Mathematics of motif combination and their use for functional simulation: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 69-73, 1992.

Seebergh, Jill E., Berg, John C., Dynamic wetting in the low capillary number regime: Chemical Engineering Science v. 47 no. 17-18 Dec 1992 p. 4455-4464, 1992.

Sehmbey, M. S., Pais, M. R., Chow, L. C., Effect of surface material properties and surface characteristics in evaporative spray cooling: Journal of Thermophysics and Heat Transfer v. 6 no. 3 Jul-Sep 1992 p. 505-512, 1992.

Selvan, R. Panneer, Computation of pressures on Texas Tech Building: Journal of Wind Engineering and Industrial Aerodynamics v. 43 pt 3 Oct 1992. p. 1619-1627, 1992.

Seunghwan Kim, Jaehak Jung, Fractal analysis of surface topography: Journal of the Korean Physical Society, vol.25, no.2, p. 95-9, April 1992.

Shcherbinskij, V.G., New methods for estimation of the article surface roughness and for correction of the ultrasonic defectoscope susceptibility: Defektoskopiya no. 11 Nov 1992. p. 3-13, 1992.

Sherrington, I., Smith, E. H., Performance assessment of stylus based areal roughness measurement systems: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 219-226, 1992.

Shimizu, Shigeki, Aoki, Kenichi, Kobayashi, Makoto, Saito, Teruhiro, Yamada, Yasuhiro, Kosumi, Fumio, Ti-enhanced cold rolling work roll with self-generating optimal roughness characteristics: ISIJ International v. 32 no. 11 1992 p. 1238-1243, 1992.

Shinno, H., Hashizume, H., Ito, Y., Sato, C., Structural configuration and performances of machining environment-controlled ultraprecision diamond turning machine 'capsule': CIRP Annals v. 41 no. 1 1992 p. 425-428, 1992.

Shoshany, M., Simulation of bidirectional reflectance distributions for various surface microstructures: International Journal of Remote Sensing v. 13 no. 12 Aug 1992 p. 2355-2361, 1992.

Sidran, Miriam, Egan, Walter G., Analysis of sea-surface polarization imagery of Hawaii environs obtained by the space shuttle: Proceedings of SPIE - The International Society for Optical Engineering v. 1747 1992, Bellingham, WA, p. 140-151, 1992.

Silvennoinen, R., Peiponen, K. -E., Asakura, T., Zhang, Yan-Fang, Gu, Cong, Ikonen, K., Morley, E. J., Specular reflectance of cold-rolled aluminum surfaces: Optics and Lasers in Engineering v. 17 no. 2 1992 p. 103-109, 1992.

Sinha, Pramath R., Bajcsy, Ruzena K., Robotic exploration of surfaces and its application to legged locomotion: 1992 IEEE Intl. Conf. on Robotics and Automation, Proceedings v. 1. Piscataway, NJ,. p. 221-226, 1992.

Skare, T., Stahl, J.-E., Static and dynamic friction processes under the influence of external vibrations: Wear, vol.154, no.1, p. 177-92, 15 April 1992.

Slavinska, D., Chudaacek, I., Nemec, J., Classification of polymeric materials surfaces: International Journal of Electronics vol.73, no.5 p. 1099-101, Nov. 1992.

Snaebjornsson, Jonas Thor, Sigbjornsson, Ragnar, Wind structure over postglacial lava surface: Journal of Wind Engineering and Industrial Aerodynamics v. 41 no. 1-3 Oct 1992. p. 305-315, 1992.

Snezhko, Yury, Mathematical modeling of amplitude-phase measuring system for a precision surface-roughness registration: Proceedings of SPIE - The International Society for Optical Engineering v. 1776 1992. Bellingham, WA, p. 171-182, 1992.

Solomon, Fredric, Ikeuchi, Katsushi, Inspecting specular lobe objects using four light sources: Proceedings - IEEE International Conference on Robotics and Automation v. 2. IEEE, Piscataway, NJ,. p. 1707-1712, 1992.

Sommerfeld, M., Modelling of particle-wall collisions in confined gas-particle flows: International Journal of Multiphase Flow v. 18 no. 6 Nov 1992 p. 905-926, 1992.

Song, J. F., Vorburger, T. V.[PTRT1], and Rubert, P., Comparison between precision roughness master specimens and their electroformed replicas: Precision Engineering14, 284-90, 1992.

Speliotis, Dennis E., Magnetic and thermomagnetic analysis of 4 megabyte barium ferrite flexible disks: IEEE Transactions on Magnetics v. 28 no. 5 pt 2 Sep 1992. p. 2394-2396, 1992.

Spivack, M., Solution of the inverse-scattering problem for grazing incidence upon a rough surface: Journal of the Optical Society of America A (Optics and Image Science), vol.9, no.8, p. 1352-5Aug. 1992.

Starbuck, Trevor A., Software techniques for removing unwanted features on components when performing automatic form measurement: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 101-108, 1992.

Stout, K. J., ed., Proceedings of the 5th International Conference on Metrology and Properties of Engineering Surfaces: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. Pergamon Press, Elmsford, NY. 266p, 1992.

Stout, K.J., and Sullivan, P.J., The use of 3D topographic analysis to determine the micro-geometric transfer characteristics of textured sheet surfaces through rolling: Annals of the CIRP (Collège International pour la Récherche dans la Production Mechanique), v. 41, no. 1, p. 621ff, (1992).

Stupak, P. R., Syu, C. Y., and Donovan, J. A., The effect of filtering profilometer data on fractal parameters: Wear 154, 109-114 (1992).

Subramanian, Aswinikumar, Hassebrook, Laurence G., Pai, Prashant, Optimized 3-D recovery from 2-D images using sine-wave-structured light illumination: Proceedings of SPIE - The International Society for Optical Engineering v. 1705 1992, Bellingham, WA, p. 89-99, 1992.

Suess, M., Bestimmung elektrolytspezifischer Ausschleppverluste. [Determination of drag-out losses for particular electrolytes]: Galvanotechnik v. 83 no. 2 Feb 1992 p. 462-465, 1992.

Sullivan, P.F., Ramadhyani, S., Incropera, F. P., Use of smooth and roughened spreader plates to enhance impingement cooling of small heat sources with single circular liquid jets: Topics in Heat Transfer, American Society of Mechanical Engineers, Heat Transfer Division, HTD v. 206-2.p. 103-110, 1992.

Sullivan, P.J., and Blunt, L., Three-dimensional characterization of indentation topography, Visual characterization: Wear v. 159 no. 2 Dec 1 1992 p. 207-221, 1992.

Sullivan, P., Poroshin, V., Hooke, C., Application of a three-dimensional surface analysis system to the prediction of asperity interaction in metallic contacts: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 157-169, 1992.

Sutyagin, O.V., Yarosh, V.M., Forecasting of start moment for sliding bearings with solid lubricating coatings: Trenie i Iznos v. 13 no. 3 May-Jun 1992. p. 465-472, 1992.

Suzuki, K., Uematsu, T., Ohashi, H., Kitajima, K., Suga, T., Imanaka, O., Kobayashi, A., Development of a new mechanochemical polishing method with a polishing film for ceramic round bars: CIRP Annals v. 41 no. 1 1992 p. 339-342, 1992.

Tabucanon, J.T., Airey, D. W., Interface tests to investigate pile skin friction in sands: Research Report - University of Sydney, School of Civil and Mining Engineering no. 662 Oct 1992. 22p, 1992.

Tairova, L.P., Tsvetkov, S.V., Specific features of strain measurement in composite materials: Mekhanika Kompozitnykh Materialov no. 5 Sep-Oct 1992. p. 692-697, 1992.

Takakura, Y., Roughness as a process with a non-integer spectral exponent: Wear v. 159 no. 1 Nov 2 1992 p. 39-42, 1992.

Tapp, Kenneth E., Replicated optics in the production of 'supersmooth' surfaces: Proceedings of SPIE - The International Society for Optical Engineering v. 1752. Bellingham, WA, p. 240-244, 1992.

Tejedor, M., Garcia, J. A., Carrizo, J., Influence of thickness and roughness on the anisotropy of as quenched Co-based amorphous magnetic ribbons: Journal of Magnetism and Magnetic Materials v. 117 no. 1-2 Nov 1992 p. 141-144, 1992.

Theurer, W., Baechlin, W., Plate, E. J., Model study of the development of boundary layers above urban areas: Journal of Wind Engineering and Industrial Aerodynamics v. 41 no. 1-3 Oct 1992. p. 437-448, 1992.

Thomas, T.R., Some problems in the characterisation of surface microtopography, *in* Baker, L.R., ed., Commercial Applications of Precision Manufacturing at the Submicron Level: International Society for Optical Engineering (SPIE), Proceedings, v. 1573, p. 188-200, (1992).

Thouless, M.D., Fracture resistance of an adhesive interface: Scripta Metallurgica et Materialia v. 26 no. 6 Mar 15 1992. p. 949-951, 1992.

Tieleman, H. W., Wind characteristics in the surface layer over heterogeneous terrain: Journal of Wind Engineering and Industrial Aerodynamics v. 41 no. 1-3 Oct 1992. p. 329-340, 1992.

Tomlinson, W. J., Farrell, J., Fracture strength, surface roughness and corrosion of ceramics: Ceramics International v. 18 no. 5 1992 p. 355-357, 1992.

Tonshoff, H. K., Peters, J., Inasaki, I., Paul, T., Modelling and simulation of grinding processes: CIRP Annals v. 41 no. 2 1992 p. 677-688, 1992.

Tosha, Katsuji, Iida, Kisuke, Stock removal mechanism of grit blasting: Journal of the Japan Society of Precision Engineering/Seimitsu Kogaku Kaishi v. 58 no. 12 Dec 1992. p. 2025-2030, 1992.

Tritenko, A.N., Induced tangential contact vibrations of die within preliminary shift: Problemy Prochnosti i Nadezhnos'ti Mashin no. 2 Feb 1992. p. 23-28, 1992.

Trmal, G. J., Zhu, C. B., Midha, P. S., Expert system for grinding process optimisation: Journal of Materials Processing Technology v. 33 no. 4 Sep 1992 p. 507-517, 1992.

Trout, Thomas J., Furrow flow velocity effect on hydraulic roughness: Journal of Irrigation and Drainage Engineering v. 118 no. 6 Nov-Dec 1992. p. 981-987, 1992.

Truckenbrodt, Horst, Duparre, Angela, Schuhmann, Uwe, Roughness and defect characterization of optical surfaces by light-scattering measurements: Proceedings of SPIE - The International Society for Optical Engineering v. 1781 1992, p. 139-151, 1992.

Tsao, Bang-Hung, Ramalingam, Mysore L., Moraga, N. O., Jacobson, D. L., Normal spectral emittance of W-Re-HfC and W-Re-ThO//2 alloys: Journal of Thermophysics and Heat Transfer v. 6 no. 4 Oct-Dec 1992 p. 680-684, 1992.

Tsukada, Tadao, Katoh, Katsuo, Cho, Nahngyoo, Study of control for compensating specimen surface orientation in three-dimensional surface roughness measuring instrument: Journal of the Japan Society of Precision Engineering/Seimitsu Kogaku Kaishi v. 58 no. 4 Apr 1992 p. 697-702.

Ulander, L. M. H., Johansson, R., Askne, J., C-band radar backscatter of baltic sea ice, theoretical predictions compared with calibrated SAR measurements: International Journal of Remote Sensing v. 13 no. 13 Sep 10 1992 p. 2447-2468, 1992.

Uman, S.M., Nikitin, Yu.I., Bakalenko, A.N., Zaritskaya, O.A., Preparation of aluminium oxide abrasive powders with isometric grit shape: Sverkhtverdye Materialy no. 4 Jul-Aug 1992. p. 32-35, 1992.

Urusovskij, I.A., On plane wave diffraction on uneven surface: Akusticheskii Zurnal v. 38 no. 5 Sep-Oct 1992. p. 933-942, 1992.

Vandenberg, S., Osborne, C. F., Digital image processing techniques, fractal dimensionality and scale-space applied to surface roughness: Wear v. 159 no. 1 Nov 2 1992 p. 17-30, 1992.

Venkatesh, V. C., Xue, W., Quinto, D. T., Surface studies during indexable drilling with coated carbides of different geometry: CIRP Annals v. 41 no. 1 1992 p. 613-616, 1992.

Vershina, A.L., Izotova, S.D., Effect of substrate surface roughness and ion cleaning time on protection properties of ion-plasma coatings: Fizika i Khimiya Obrabotki

Materialov no. 3 May-Jun 1992. p. 69-72, 1992.

Vesnitskij, A.V., Conditions of contact strength, plasticity and failure of materials under bearing strain shear, Metallovedenie i Termicheskaya Obrabotka Metallov no. 6 Jun 1992. p. 26-32.

Vorburger, T.V., Methods for characterising surface topography: Opt. Soc. America, Tutorials in Optics, p. 137-151 (1992).

Wackelgard, Ewa, Study of the optical properties of nickel-pigmented anodized aluminum oxide on aluminum: Proceedings of SPIE - The International Society for Optical Engineering v. 1727. Bellingham, WA, p. 82-86, 1992.

Wang, T. L., Shahawy, M., Huang, D. Z., Impact in highway prestressed concrete bridges: Computers and Structures v. 44 no. 3 Jul 17 1992 p. 525-534, 1992.

Wang, Zhrgang, Kondo, Kazuyoshi, Mori, Toshihiko, Optimum conditions for surface-flattening by replication mechanism in ironing process: Engineered Surfaces American Society of Mechanical Engineers, Production Engineering Division, PED v. 62 1992. ASME, New York. p. 101-112, 1992.

Wansmann, J., Getzlaff, M., Westphal, C., Schoenhense, G., Surface hysteresis curves of Fe(110) and Fe(100) crystals in ultrahigh vacuum - evidence of adsorbate influences: Journal of Magnetism and Magnetic Materials v. 117 no. 1-2 Nov 1992 p. 38-44, 1992.

Watanabe, Shigeo, Hayashi, Niichi, Kinoshita, Katsuharu, Tanabe, Kouichi, Touchard, Gerard, New methods of reducing streaming current (a comparison of calculated and experimental results): IEE Conference Publication no. 363. IEE, Michael Faraday House, Stevenage, UK. p. 370-373, 1992.

Wehbi, D., Roques-Carmes, C., Tricot, C., Perturbation dimension for describing rough surfaces: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 211-216, 1992.

Weltz, Mark A., Arslan, Awadis B., Lane, Leonard J., Hydraulic roughness coefficients for native rangelands: Journal of Irrigation and Drainage Engineering v. 118 no. 5 Sep-Oct 1992 p. 776-790, 1992.

Westin, Stephen H., Arvo, James R., Torrance, Kenneth E., Predicting reflectance functions from complex surfaces: Computer Graphics (ACM) v. 26 no. 2 Jul 1992. p. 255-264, 1992.

White, Thomas D., Pumphrey, Norman D. Jr., Functional versus structural overlay of concrete pavements: Asphalt Paving Technology, Assoc. Asphalt Paving Technologists, 1992 Technical Sessions Proc., v. 61, 1983, St. Paul, MN, p. 361-392, 1993.

Wickham, Gerry, Polarization theory for the scattering of sound at imperfect interfaces: Journal of Nondestructive Evaluation v. 11 no. 3-4 Dec 1992 p. 199-210, 1992.

Wieringa, Jon, Updating the Davenport roughness classification: Journal of Wind Engineering and Industrial Aerodynamics v. 41 no. 1-3 Oct 1992. p. 357-368, 1992.

Wilson, William R.D., Schmid, Steven R., Surfaces in metal rolling: Engineered Surfaces American Society of Mechanical Engineers, Production Engineering Division, PED v. 62 1992. ASME, New York. p. 91-100, 1992.

Wu, Bende, Guo, Fuhe, Study on preparation of man-made hipbone by using composite porous titanium: Non-Ferrous Materials Advances in Powder Metallurgy v. 6. Metal Powder Industries Federation, Princeton, NJ. p. 145-149, 1992.

Wu, Tair I., Wu, Jiann Kuo, Effect of surface finish on the corrosion behavior of commercial 7075 Al alloy: Scripta Metallurgica et Materialia v. 27 no. 7 Oct 1 1992 p. 875-880, 1992.

Xu, D. M., Mohamed, A. M. O., Yong, R. N., Caporuscio, F., Development of a criterion for road surface roughness based on power spectral density function: Journal of Terramechanics v. 29 no. 4-5 Jul-Sep 1992 p. 477-486, 1992.

Yamasaki, Hiromichi, Awaka, Jun, Takahashi, Akira, Okamoto, Ken'ichi, Ihara, Toshio, Measurement of soil backscattering with a 60-GHz scatterometer: IEEE Transactions on Geoscience and Remote Sensing v. 30 no. 4 Jul 1992 p. 761-766, 1992.

Yan, Biing Hwa, Shieh, Fu Ten, Electrical discharge machining characteristics of Ti-6Al-4V alloy: Keikinzoku/Journal of Japan Institute of Light Metals v. 42 no. 11 Nov 1992 p. 644-649, 1992.

Yan, F., Giot, M., Mechanism of flashing inception and its modelling: Heat and Technology v. 10 no. 3-4 1992. p. 145-160, 1992.

Yanagi, K., Tsukada, Y., Mutoh, Y., Geometrical assessment of machined ceramic surface for estimating fatigue strength: International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 137-140, 1992.

Yang, Taiqian, Broschat, Shira L., Comparison of scattering model results for two-dimensional randomly rough surfaces: IEEE Transactions on Antennas and Propagation v. 40 no. 12 Dec 1992. p. 1505-1512, 1992.

Yankielun, Norbert E., Arcone, Steven A., Crane, Robert K., Thickness profiling of freshwater ice using a millimeter-wave FM-CW radar: IEEE Transactions on Geoscience and Remote Sensing v. 30 no. 5 Sep 1992 p. 1094-1100, 1992.

Yongqing, J. and Zheng Linqing, A full numerical solution for the elastic contact of three-dimensional real rough surfaces: Wear, vol.157, no.1, p. 151-61, 14 Aug. 1992.

Yoshida, S., Nanometrology: Metrologia, vol.28, no.6, p. 433-41, April 1992.

Yoshimura, Takeaki, Fujiwara, Kazuo, Two-dimensional measurements of surface roughness with a double scattered image speckle: Optics Communications v. 91 no. 3-4 Jul 15 1992 p. 168-174, 1992.

Yu, G., Fissan, H., Comparison of light scattered by a single particle on different surfaces: Journal of Aerosol Science v. 23 no. SUPPL 1 1992. p. S345-S348, 1992.

Yu, Jingchi, Hou, L., Wei, J., Yao, J. E., Cao, Jianlin, Yu, Junyi, Scanning tunneling microscope to evaluate supersmooth surface roughness: Proceedings of SPIE - The International Society for Optical Engineering v. 1752. Bellingham, WA, p. 123-131, 1992.

Yuce, H.H., Kilmer, J.P., Varachi, J.P. Jr., Atomic force microscopy measurements to study optical fiber aging: NIST Special Publication no. 839 Sep 1992. p. 33-36, 1992.

Zaghloul, Nabil A., Gradually varied flow in circular channels with variable roughness: Advances in Engineering Software v. 15 no. 1 1992. p. 33-42, 1992.

Zekorn, S., Fries, T., Becker, C., Wandelt, K., Topography of sputtered semiconductor surfaces by STM in air: Physica Status Solidi A, vol.131, no.1, p. 99, 16 May 1992.

Zhang, Bingqi, Bagchi, Amit, Paul, Frank W., Preliminary study of surface roughness in wheel brush polishing: Engineered Surfaces American Society of Mechanical Engineers, Production Engineering Division, PED v. 62 1992. ASME, New York. p. 179-190, 1992.

Zhong, Z., Nakagawa, T., New grinding methods for aspheric mirrors with large curvature radii: CIRP Annals v. 41 no. 1 1992 p. 335-338, 1992.

Zipin, Richard B., Length of surface profiles: Engineered Surfaces: American Society of Mechanical Engineers, PED v. 62 1992. ASME, NY. p. 17-36, 1992.

# 1993 A-G

Adams, D.P., Eaglesham, D.J., Yalisove, S.M, Low temperature Si homoepitaxy, Effects of impurities on microstructure: Common Themes and Mechanisms of Epitaxial Growth, Materials Research Society Symposium Proceedings v. 312 Apr 13-15 1993, Pittsburgh, PA, p. 29-34, 1993.

Adrian, G., Wilkens, W., Stoelzel, C., Grabe, G., Windte, V., Growth and surface morphology of laser ablated YBaCuO films analysed by SEM: IEEE Transactions on Applied Superconductivity v. 3 no. 1 pt 3 Mar 1993. p. 1061-1069, 1993.

Agaev, Kh.M., Erkimbaev, A.O., Petrina, N.Yu., Semenov, A.M., Kinetics of pyrocarbon film formation with a simultaneous growth of layers: Teplofizika Vysokikh Temperatur v. 31 no. 4 Jul-Aug 1993. p. 569-574, 1993.

Agostinelli, V. Martin Jr., Yeric, Greg M., Tasch, Al F. Jr, Universal MOSFET hole mobility degradation models for circuit simulation: IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems v. 12 no. 3 Mar 1993. p. 439-445, 1993.

Ai, Xiaolan, Cheng, Herbert S., Fast model for pressure profile in rough EHL line contacts: Journal of Tribology, Transactions of the

ASME v. 115 no. 3 Jul 1993. p. 460-465, 1993.

Aikman, D.I, Asset appraisal of trunk mains: Journal of the Institution of Water and Environment Management v. 7 no. 1 Feb 1993. p. 37-44, 1993.

Alay, Josep-Lluis, Verhaverbeke, Steven, Vandervorst, Wilfried, Heyns, Marc, Critical parameters for obtaining low particle densities on a Si surface in an HF-last process: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes v. 32 no. 1B Jan 1993. p. 358-361, 1993.

Albrecht, Martin, Fritzsche, Helmut, Gradmann, Ulrich, Kinetic facetting in homoepitaxy of Fe(110) on Fe(110): Surface Science v. 294 no. 1-2 Sep 1 1993. p. 1-9, 1993.

Allor, R.L., Whalen, T.J., Baer, J.R., Kumar, K.V., Machining of silicon nitride, experimental determination of process/property relationships: NIST Special Publication no. 847 Jun 1993. p. 223-234. [*also*, International Journal of Machine Tools & Manufacture v. 32 no. 1-2 Feb-Apr 1992. p. 115-123, 1992].

Amra, C., First-order vector theory of bulk scattering in optical multilayers: Journal of the Optical Society of America A, Optics and Image Science v. 10 no. 2 Feb 1993. p. 365-374, 1993.

an den Hoogenhof, W.W., de Boer, D.K.G., Glancing-incidence x-ray analysisv: Spectrochimica Acta, Part B, Atomic Spectroscopy v. 48 no. 2 Feb 1993. p. 277-284, 1993.

Anderson, W.R., Lombardi, D.R., Mitev, P.H., Ma, T.P., Wheeler, R.G., Determination of Si/SiO//2 interfacial roughness using weak localization: Microelectronic Engineering v. 22 no. 1-4 Aug 1993. p. 43-46, 1993.

Anelchik, D.E., Sazonov, I.P., Mironenko, S.V., Optimization of the technology for defect-tree grinding of non-rigid coated workpieces: Sverkhtverdye Materialy no. 3 May-Jun 1993. p. 50-53, 1993.

Antolini, A., Francesio, L., Gastaldi, L., Genova, F., Lamberti, C., Lazzarini, L., Papuzza, C., Rigo, C., Salviati, G., Effects of roughness and composition variation at the InP/InGaAs and InGaAs/InP interfaces on CBE grown quantum wells: Journal of Crystal Growth v. 127 no. 1-4 Feb 2 1993. p. 189-193, 1993.

Antonetti, V.W., Whittle, T.D., Simons, R.E., Approximate thermal contact conductance correlation: Journal of Electronic Packaging, Transactions of the ASME v. 115 no. 1 Mar 1993. p. 131-134, 1993.

Aramaki, Hirotoshi, Cheng, Herbert S., Chung, Yip-Wah: Contact between rough surfaces with longitudinal texture. Part I, Average contact pressure and real contact area: Journal of Tribology, Transactions of the ASME v. 115 no. 3 Jul 1993. p. 419-424, 1993.

Aramaki, Hirotoshi, Cheng, Herbert S., Chung, Yip-Wah: Contact between rough surfaces with longitudinal texture. Part II, Flash temperature: Journal of Tribology, Transactions of the ASME v. 115 no. 3 Jul 1993. p. 425-431, 1993.

Ardizzone, S., Bianchi, C., Carella, S., Cattania, M.G., Procedure for achieving single crystal-like zirconia particles: Materials Chemistry and Physics v. 34 no. 2 May 1993. p. 154-156, 1993.

Asokan, T., Sudarshan, T.S., Dependence of the surface flashover properties of alumina on polishing abrasive parameters: IEEE Transactions on Electrical Insulation v. 28 no. 4 Aug 1993. p. 535-544, 1993.

Auer, Kirk, Shakoor, Abdul, Statistical approach to evaluate debris avalanche activity in central Virginia: Engineering Geology v. 33 no. 4 Apr 1993. p. 305-321, 1993.

Auracher, Hein, Transition boiling in natural convection systems: Proc Eng Found Conf Pool External Flow Boiling. ASME, p. 219-236, 1993.

Auvray, P., Baudet, M., Deparis, C., Massies, J., Non-equivalence of direct and reverse interfaces in AlAs-GaAs superlattice structures as evidenced by x-ray diffraction: Journal of Crystal Growth v. 127 no. 1-4 Feb 2 1993. p. 821-825, 1993.

Azoulay, Jacob, Low-temperature crystallization of high Tc Y-Ba-Cu-O thin films by resistive evaporation: Applied Superconductivity v. 1 no. 3-6 pt 1 Mar-Jun 1993. p. 859-865, 1993.

Bahadur, S., Gong, Deli, Transfer and wear of nylon and CuS-nylon composites, filler proportion and counterface characteristics: Wear v. 162-64 pt A Apr 13 1993. p. 397-406, 1993.

Bang, Se Yoon, Roy, Subhransu, Modest, Michael F., CW laser machining of hard ceramics. II. Effects of multiple reflections: International Journal of Heat and Mass Transfer v. 36 no. 14 Sep 1993. p. 3529-3540, 1993.

Barnas, J., Intrinsic biquadratic contribution to interlayer coupling in magnetic layered structures: Journal of Magnetism and Magnetic Materials v. 123 no. 1-2 May 1 1993. p. L21-L24, 1993.

Bayutova, O.P., Mardezhov, A.S., Pokrovskij, L.D., Chikichev, S.I., Shvets, V.A., HgTe film surface microrelief investigation by the ellipsometry method: Avtometriya no. 1 Jan-Feb 1993. p. 98-105, 1993.

Bellow, Donald G., Viswanath, Narendra S., Analysis of the wear of polymers: Wear v. 162-64 pt B Apr 13 1993. p. 1048-1053, 1993.

Benabdallah, S.H, Shear strength resulting from static friction of some thermoplastics: Journal of Materials Science v. 28 no. 12 Jun 15 1993. p. 3149-3154, 1993.

Bender, A., Gerber, Th., Albrecht, H., Himmel, B., X-ray reflectivity study of r.f.-sputtered thin SiO//2 films: Thin Solid Films v. 229 no. 1 Jun 5 1993. p. 29-32, 1993.

Bennett, Jean M., Recent developments in surface roughness characterization: Engineering Optics v. 6 no. 1 Feb 1993. p. 1-9, 1993.

Berger, I., Minner, K., New topographical evaluation process for glazes and ceramic surfaces: CFI, Ceramic Forum-Int/Berichte der DKG (Deutschen Keramischen Gesellschaft) v. 70 no. 4 Apr 1993. p. 140-146, 1993.

Bertomeu, J., Asensi, J. M., Puigdollers, J., Andreu, J., Morenza, J. L., Structure of a-Si,H/a-Si//1// minus //xC//x,H multilayers deposited in a reactor with automated substrate holder: Vacuum v. 44 no. 2 Feb 1993 p. 129-134, 1993.

Bhaskar, Ragula (Ed.), Proceedings of the 6th US Mine Ventilation Symposium: Proceedings of the US Mine Ventilation Symposium 1993. SME, Littleton, CO, 640p, 1993.

Blakemore, M., Scattering of acoustic waves by the rough surface of an elastic solid: Ultrasonics v. 31 no. 3 1993. p. 161-174, 1993.

Bondarenko, G.G., Korzhavyj, A.P., Kristya, V.I., Rozhkov, A.M., Features of behaviour of oxidized metals and alloys under ion bombardment conditions: Izvestiya AN SSSR, Metally no. 3 May-Jun 1993. p. 101-105, 1993.

Boughaba, S., Auvert, G., Deposition of micron-size nickel lines by argon-ion laser-assisted decomposition of nickel tetracarbonyl: Applied Surface Science, v. 69 no. 1-4 May 2 1993. p. 79-86.

Boyle, R.J., Prediction of surface roughness and incidence effects on turbine performance: American Society of Mechanical Engineers (Paper) 1993. ASME, New York. p. 1-10 93-GT-280, 1993.

Boynton, J.L., Tabibzadeh, R., Hudson, S.T., Investigation of rotor blade roughness effects on turbine performance: Journal of Turbomachinery, Transactions of the ASME v. 115 no. 3 Jul 1993. p. 614-620, 1993.

Brakke, Thomas W., Wergin, William P., Erbe, Eric F., Harnden, Joann M., Seasonal variation in the structure and red reflectance of leaves from yellow poplar, red oak, and red maple: Remote Sensing of Environment v. 43 no. 2 Feb 1993. p. 115-130, 1993.

Brander, Robert W., Greenwood, Brian, Bedform roughness and suspended sediment transport in the surf zone: National Conference Publication - Institution of Engineers, Australia v. 1 no. 93 pt 4 1993. IE Aust, Crows Nest, NSW, Aust, nt. p. 241-246, 1993.

Briers, J. D., Surface roughness evaluation: in Speckle Metrology, R. J. Sirohi ed., Marcel Dekker, New York (1993).

Brown, C.A., Charles, P.D., Johnsen, W.A., and Chesters, S., Fractal analysis of topographic data by the patchwork method: Wear, v. 161, nos. 1-2, p. 61-67, (1993).

Brown, Gordon M., Harding, Kevin G., and Stahl, H.P., eds., Industrial Applications of Optical Inspection, Metrology, and Sensing: Proceedings of SPIE - The International Society for Optical Engineering v. 1821, 488p, 1993.

Brunzel', Yu.M., Fomin, I.M., Influence of heat treatment on roughness of surface of steel after turning and formed chip kind: Metallovedenie i Termicheskaya Obrabotka Metallov no. 3 Mar 1993. p. 34-35, 1993.

Buijs, M., Korpel-Van Houten, K., Model for lapping of glass: Journal of Materials Science v. 28 no. 11 Jun 1 1993. p. 3014-3020, 1993.

Buijs, M., Korpel-van Houten, K., Model for three-body abrasion of brittle materials: Wear v. 162-64 pt B Apr 13 1993. p. 954-956, 1993.

Buijs, M., Korpel-van Houten, K., Three-body abrasion of brittle materials as studied by lapping: Wear v. 166 no. 2 Jul 1 1993. p. 237-245, 1993.

Calvo, L., Perez-Rodriguez, A., Romano-Rodriguez, A., Morante, J.R., Montserrat, J., Analysis of structural transformations in high fluence nitrogen ion implanted aluminum: Thermodynamics and Kinetics, Materials Research Society Symposium Proceedings v. 311 1993. Pittsburgh, PA, p. 191-196, 1993.

Cao, Tianning, New trends of foreign optical technology and measurement viewed from 1992 SPIE international conference: Guangxue Jishu/Optical Technique no. 4 Jul 20 1993. p. 30-37, 1993.

Caravia, L., Dowson, D., Fisher, J., Start up and steady state friction of thin polyurethane layers: Wear v. 160 no. 1 Jan 2 1993 p. 191-197, 1993.

Carter, G., Nobes, M.J., Stoere, H., Katardjiev, I.V., Evolution of atomic scale topography by sputtering erosion: Surface and Interface Analysis v. 20 no. 1 Jan 1993. p. 90-94, 1993.

Caruthers, Jerald W., Novarini, Jorge C., Modeling bistatic bottom scattering strength including a forward scatter lobe: IEEE Journal of Oceanic Engineering v. 18 no. 2 Apr 1993. p. 100-107, 1993.

Chakroun, Walid, Taylor, Robert P., Heat transfer and fluid dynamics measurements in accelerated rough-wall boundary layer: American Society of Mechanical Engineers (Paper) 1993. ASME, New York. 10p 93-GT-78, 1993.

Chandrasekaran, T., Kishore: On the roughness dependence of wear of steels, a new approach: Journal of Materials Science Letters v. 12 no. 12 Jun 15 1993. p. 952-954, 1993.

Chang, L., Webster, M.N., Jackson, A., On the pressure rippling and roughness deformation in elastohydrodynamic lubrication of rough surfaces: Journal of Tribology, Transactions of the ASME v. 115 no. 3 Jul 1993. p. 439-444, 1993.

Chaplin, J.R, Planar oscillatory flow forces at high Reynolds numbers: Journal of Offshore Mechanics and Arctic Engineering, Transactions of the ASME v. 115 no. 1 Feb 1993. p. 31-39, 1993.

Chawla, K.K., Ferber, M.K., Xu, Z.R., Venkatesh, R, Interface engineering in alumina/glass composites: Materials Science & Engineering A, Structural Materials, Properties, Microstructure and Processing v. A162 no. 1-2 Apr 30 1993. p. 35-44, 1993.

Chen, Long-Qing: Influence of contact temperature on contact fatigue failure forms, Part 1 - contact temperature analysis of rolling-sliding contact specimen: Journal of Tribology, Transactions of the ASME v. 115 no. 3 Jul 1993. p. 466-470, 1993.

Chen, Long-Qing: Influence of contact temperature on contact fatigue failure forms, Part 2 - the test and analysis: Journal of Tribology, Transactions of the ASME v. 115 no. 3 Jul 1993. p. 471-475, 1993.

Chin, C.C., Morishita, T., Sugimoto, T, Influence of the surface roughness of the substrates on the surface morphology of YBa//2Cu//3O//7// minus //x thin films: Journal of Crystal Growth v. 132 no. 1-2 Sep 1993. p. 82-90, 1993.

Chiou, B.S., Chang, J.H., Electroless Cu plated AlN substrate: Proceedings - Electronic Components and Technology Conference 1993. IEEE, Piscataway, NJ. p. 1085-1089, 1993.

Chiu, Chao-Lin, Lin, Gwo-Fong, Lu, Jyh-Ming, Application of probability and entropy concepts in pipe-flow study: Journal of Hydraulic Engineering v. 119 no. 6 Jun 1993. p. 742-757, 1993.

Chiu, N., Malkin, S., Computer simulation for cylindrical plunge grinding: CIRP Annals v. 42 no. 1 1993. p. 383-387, 1993.

Chong, A.K.F., and Lieu, D.K., Contour mapping of precision defects with laser Doppler vibrometry: Precision Engineering, v. 15, no. 2, p. 166-172, (1993).

Chou, Yeong-Shyung, Green, David J., Silicon carbide platelet/alumina composites, III, toughening mechanisms: Journal of the American Ceramic Society v. 76 no. 8 Aug 1993. p. 1985-1992, 1993.

Chu, Shi-Chih, Kuo, Kwo-Jane, Numerical procedure to compute bearing capacity of shallow foundations: Computing in Civil and Building Engineering Proc 5 Int Conf Comput Civ Build Eng V ICCCBE 1993. ASCE, New York. p. 1404-1408, 1993.

Chung, K.C., Sheffield, J.W., Sauer, H.J. Jr., O'Keefe, T.J., Williams, A., Thermal contact conductance of a phase-mixed coating layer by transitional buffering interface: Journal of Thermophysics and Heat Transfer v. 7 no. 2 Apr-Jun 1993. p. 326-333, 1993.

Clark, Bryan K., Effect of slider roughness on asperity testing of thin film media: IEEE Transactions on Magnetics v. 29 no. 1 Jan 1993. p. 235-240, 1993.

Cobianu, Cornel, Popa, Ovidiu, Dascalu, Dan, On the electrical conduction in the interpolysilicon dielectric layers: IEEE Electron Device Letters v. 14 no. 5 May 1993. p. 213-215, 1993.

Cooper, J.R., Dowson, D., Fisher, J., Macroscopic and microscopic wear mechanisms in ultra-high molecular weight polyethylene: Wear v. 162-64 pt A Apr 13 1993. p. 378-384, 1993.

Cotta, M.A., Hamm, R.A., Chu, S.N.G., Staley, T.W., Harriott, L.R., Panish, M.B., Temkin, H., Evolution of roughness on InP layers observed by scanning force microscopy: Common Themes and Mechanisms of Epitaxial Growth, Materials Research Society Symposium Proceedings v. 312 Apr 13-15 1993. Pittsburgh, PA, p. 23-28, 1993.

Coulon, G., Daillant, J., Collin, B., Benattar, J.J., Gallot, Y., Time evolution of the free surface of ultrathin copolymer films: Macromolecules v. 26 no. 7 Mar 29 1993. p. 1582-1589, 1993.

Crassous, J., Charlaix, E., Gayvallet, H., Loubet, J., Experimental study of a nanometric liquid bridge with a surface force apparatus: Langmuir v. 9 no. 8 Aug 1993. p. 1995-1998, 1993.

Cui, G., Beetz, C.P. Jr., Boerstler, R., Steinbeck, J., YBa//2Cu//3O//7 thin films on nanocrystalline diamond films for HTSC bolometer: IEEE Transactions on Applied Superconductivity v. 3 no. 1 pt 4 Mar 1993. p. 2914-2917, 1993.

Cupini, N.L., Ferreira, J.R., Turning of carbon and glass fiber hybrid cloth composite material: NIST Special Publication no. 847 Jun 1993. p. 447-453, 1993.

Davis, K., Hinwood, J.B., Environmental loading on offshore structures: National Conference Publication - Institution of Engineers, Australia v. 1 no. 93 pt 4 1993. IE Aust, Crows Nest, NSW, Aust. p. 215-219, 1993.

De Bruyn, K., Celis, J.P., Roos, J.R., Stals, L.M., Van Stappen, M., Coating thickness and surface roughness of TiN-coated high speed steel in relation to coating functionality: Wear v. 166 no. 1 Jun 15 1993. p. 127-129, 1993.

De Veirman, A.E.M., Hakkens, F.J.G., Dirks, A.G., Cross-sectional transmission electron microscopy studies of metallic multilayers: Ultramicroscopy v. 51 no. 1-4 Jun 1993. p. 306-315, 1993.

de Waal, J.P., van der Meer, J.W., Wave runup and overtopping on coastal structures: Proceedings of the Coastal Engineering Conference v. 2 1993. ASCE, New York. p. 1758-1771, 1993.

Desages, F. and Michel, O., Calibration of a 3-D surface roughness measuring device: Chalmers Univ. of Tech., Sweden (February 1993).

Di Francia, G., Influence of the substrate morphology on porous silicon formation: Solid State Communications v. 87 no. 5 Aug 1993. p. 451-453, 1993.

Diani, M., Aubel, D., Bischoff, J.L., Kubler, L., Bolmont, D., Ge Stranski-Krastanov growth mode on Si(001)(2 X 1) tested by X-ray photoelectron and Auger electron diffraction: Surface Science v. 291 no. 1-2 Jul 1993. p. 110-116, 1993.

Diebold, Alain C., Doris, Bruce, Survey of non-destructive surface characterization methods used to insure reliable gate oxide fabrication for silicon IC devices: Surface and Interface Analysis v. 20 no. 2 Feb 1993. p. 127-139, 1993.

Ding, Zhan, Huang, Jiadong, Surface roughness measurement of metals using microwave: IEEE MTT-S International Microwave Symposium Digest v. 1 1993. IEEE, Piscataway, NJ. p. 253-255, 1993.

Dornfeld, David, Liu, J.J. Bill, Abrasive texturing and burnishing process monitoring using acoustic emission: CIRP Annals v. 42 no. 1 1993. p. 397-400, 1993.

Doss, E.D., Geyer, H.K., MHD seawater propulsion: Journal of Ship Research v. 37 no. 1 Mar 1993. p. 49-57, 1993.

Doughty, C., Walkenhorst, A., Xi, X.X., Kwon, C., Li, Qi, Bhattacharya, S., Findikoglu, A.T., Mao, S.N., Venkatesan, T., YBa//2Cu//3O//7// minus //x/SrTiO//3 bilayers for superconducting field effect devices by pulsed laser deposition: IEEE Transactions on Applied Superconductivity v. 3 no. 1 pt 4 Mar 1993. p. 2910-2913, 1993.

Drury, William J., Stewart, Philip S., Characklis, William G, Transport of 1- mu m latex particles in Pseudomonas aeruginosa biofilms: Biotechnology and Bioengineering v. 42 no. 1 Jun 5 1993. p. 111-117, 1993.

Dukhin, S.S., Non-equilibrium electric surface phenomena: Advances in Colloid and Interface Science v. 44 May 24 1993. p. 1-134, 1993.

Dumelow, T., Parker, T.J., Smith, S.R.P., Tilley, D.R., Far-infrared spectroscopy of phonons and plasmons in semiconductor superlattices: Surface Science Report v. 17 no. 3 Mar 1993. p. 151-212, 1993.

Eby, Ray K., Henderson, Grant S., Wicks, Fred J., Arnold, George W., AFM imaging of the crystalline-to-amorphous transition on the surface of ion-implanted mica: Materials Research Society Symposium Proceedings v. 295 1993. Pittsburgh, PA, nt. p. 139-144, 1993.

Efeoglu, I., Arnell, R.D., Tinston, S.F., Teer, D.G., Mechanical and tribological properties of titanium aluminum nitride coatings formed in a four magnetron closed-field sputtering system: Surface & Coatings Technology v. 57 no. 2-3 May 28 1993. p. 117-121, 1993.

Efeoglu, I., Arnell, R.D., Tinston, S.F., Teer, D.G., Mechanical and tribological properties of titanium nitride coatings formed in a four magnetron closed-field sputtering system: Surface & Coatings Technology v. 57 no. 1 Apr 23 1993. p. 61-69, 1993.

Efford, N.D., Scattering laws for reflected solar radiation and the characterization of terrain roughness: International Journal of Remote Sensing v. 14 no. 6 Apr 1993. p. 1055-1080, 1993.

Egli, W.A., Visintin, A., Triaca, W.E., Arvia, A.J., Development of facetting and roughening at platinum polyfacetted single-crystal electrodes in a chloroplatinic acid solution: Applied Surface Science, v. 68 no. 4 Aug 1993. p. 583-593.

Ehinger, M., Wenzel, M., Litz, T., Landwehr, G., Scanning tunneling microscope investigation of the effects of CdTe substrate preparation on molecular beam epitaxially grown no.-CdTe layers: Materials Science & Engineering B, Solid-State Materials for Advanced Technology v. B16 no. 1-3 Jan 30 1993. p. 151-154, 1993.

Eklund, Elliott A., Snyder, Eric J., Williams, R. Stanley: Correlation from randomness, quantitative analysis of ion-etched graphite surfaces using the scanning tunneling microscope: Surface Science v. 285 no. 3 Apr 10 1993. p. 157-180, 1993.

El Baradie, M.A., Surface roughness model for turning grey cast iron (154 BHN): Proceedings of the Institution of Mechanical Engineers, Part B, Journal of Engineering Manufacture v. 207 no. B1 1993. p. 43-50, 1993.

Enache, S., Opran, C., Dynamic stability of the technological machining system in EDM: CIRP Annals v. 42 no. 1 1993. p. 209-214, 1993.

Esen, Ismail I., Design of sewers based on minimum velocity: Journal of Environmental Engineering v. 119 no. 3 May-Jun 1993. p. 591-594, 1993.

Etemadi, G., Palmier, J.F., Effect of interface roughness on non-linear vertical transport in GaAs/AlAs superlattices: Solid State Communications v. 86 no. 11 Jun 1993. p. 739-743, 1993.

Ettedgui, E., Peng, C., Tsybeskov, L., Gao, Y., Fauchet, P.M., Carver, G.E., Mizes, H.A., High spatial resolution mapping of porous silicon: Materials Research Society Symposium Proceedings v. 283 1993. Pittsburgh, PA, p. 173-178, 1993.

Evseev, D.G., Medvedev, B.M., Grigoryan, G.G., Ermolin, O.A., Description of the rolling friction process by acoustic modelling: Wear v. 167 no. 1 Jul 15 1993. p. 33-40, 1993.

Fan, Fa-Gung, Ahmadi, Goodarz, Sublayer model for turbulent deposition of particles in vertical duct with smooth and rough surfaces: Journal of Aerosol Science v. 24 no. 1 Jan 1993. p. 46-64, 1993.

Fatt, Yoon Soon, Observations of roughening on In//0//.//1Ga//0//.//9As/GaAs surfaces by atomic force microscopy: Semiconductor Science and Technology v. 8 no. 4 Apr 1993. p. 509-512, 1993.

Fernholz, G., Benz, H. Th., Dielectric properties of polyoxides for EEPROM: Microelectronics Journal v. 24 no. 4 Jul 1993. p. 435-444, 1993.

Foulon, F., Lehmann, O., Stuke, M., Laser direct-write Al deposition on Si, GaAs and diamond from trialkylamine-alane precursors: Applied Surface Science, v. 69 no. 1-4 May 2 1993. p. 87-93.

Frei, H., Grathwohl, G., Microstructure and strength of advanced ceramics after machining: Ceramics International v. 19 no. 2 1993. p. 93-104, 1993.

Frey, L., Ergele, W., Falter, T., Gong, L., Ryssel, H., Analysis of microstructured samples by focused ion beam sample preparation: Microelectronic Engineering v. 21 no. 1-4 Apr 1993. p. 375-378, 1993.

Fuchs, G, Montandon, C, Treilleux, M, Dumas, J, Cabaud, B, Melinon, P, Hoareau, A, Low-energy Bi cluster beam deposition: Journal of Physics D, Applied Physics v. 26 no. 7 Jul 14 1993. p. 1114-1119, 1993.

Fujimori, Toshinari, Nagao, Satoru, Gotoh, Hideki, Layer-by-layer growth mechanism of Al//xGa//1// minus //xP grown by gas-source MBE: Journal of Crystal Growth v. 127 no. 1-4 Feb 2 1993. p. 213-216, 1993.

Funck, James W., Forrer, Johannes B., Butler, David A., Brunner, Charles C., Maristany, Alberto G., Measuring surface roughness on wood, a comparison of laser-scatter and stylus-tracing approaches: Proceedings of SPIE - The International Society for Optical Engineering v. 1821 1993. Bellingham, WA, p. 173-184, 1993.

Furukawa, Yoshinori, Ishikawa, Ikuo, Direct evidence for melting transition at interface between ice crystal and glass substrate: Journal of Crystal Growth v. 128 no. 1-4 pt 2 Mar 1 1993. p. 1137-1142, 1993.

Galante, G., Lombardo, A., Piacentini, M., Fractal dimension, A useful tool to describe the microgeometry of machined surfaces: International Journal of Machine Tools & Manufacture v. 33 no. 4 Aug 1993. p. 525-530, 1993.

Gannot, Israel, Schrunder, S., Ertl, Thomas, Tschepe, Johannes, Dror, Jacob, Mueller, Gerhard J., Croitoriu, Nathan I., Flexible waveguides for the delivery of high-power Er-YAG laser radiation: Proceedings of SPIE - The International Society for Optical Engineering v. 1893, Bellingham, WA, p. 188-194, 1993.

Gao, Guolong, Non-contact precision measuring system: Hongwai/Infrared no. 5 May 10 1993. p. 16-22, 1993.

Garcia, N., Hernando, A., Inverse magnetostrictive effect and spin-polarized scanning tunneling microscopy. A way to measure local surface magnetoelastic coupling: Journal of Magnetism and Magnetic Materials v. 118 no. 1-2 Jan 1 1993. p. 28-32, 1993.

Gerland, M., Presles, H.N., Mendez, J., Dufour, J.P., Surface treatment of a 316L stainless steel by explosive, microstructural characterization and monotonic tensile behaviour: Journal of Materials Science v. 28 no. 6 Mar 15 1993. p. 1551-1556, 1993.

Gokhale, A., Drury, W.J., Surface roughness of anisotropic fracture surfaces: Materials Characterization v. 30 no. 4 Jun 1993. p. 279-286, 1993.

Gomi, K., Davies, J.E., Guided bone tissue elaboration by osteogenic cells in vitro: Journal of Biomedical Materials Research v. 27 no. 4 Apr 1993. p. 429-431, 1993.

Gong, Sheng S., Burnham, Marie E., Theodore, N. David, Schroder, Dieter K., Evaluation of Q//b//d for electrons tunneling from the Si/SiO//2 interface compared to electron tunneling from the poly-Si/SiO//2 interface: IEEE Transactions on Electron Devices v. 40 no. 7 Jul 1993. p. 1251-1257, 1993.

Gonzalez-Hernandez, J., Vazquez-Lopez, C., Zuniga-Segundo, A., Chao, B.S., Microstructure in thin carbon films: Solid State Communications v. 87 no. 1 Jul 1993. p. 23-26, 1993.

Gorokhov, V.A., Combined working of deep holes in articles made of viscoplastic materials: Khimicheskoe i Neftekhimicheskoe Mashinostroenie no. 4 Apr 1993. p. 27-30.

Grass, A.J., Stuart, R.J., Mansour-Tehrani, M., Common vortical structure of turbulent flows over smooth and rough boundaries: AIAA Journal v. 31 no. 5 May 1993. p. 837-847, 1993.

Grilhe, J., Study of roughness formation induced by homogeneous stress at the free surfaces of solids: Acta Metallurgica et Materialia v. 41 no. 3 Mar 1993. p. 909-913, 1993.

Groning, P., Nowak, S., Schlapbach, L., Surface modifications of nitrogen-plasma-treated stainless steels: Applied Surface Science, v. 64 no. 3 Mar 1 1993. p. 265-273.

Groot, Peter J., McGarvey, John A., Laser gage using chirped synthetic wavelength interferometry: Proceedings of SPIE - The International Society for Optical Engineering v. 1821 1993. Bellingham, WA, p. 110-118, 1993.

Groppetti, R., Cattaneo, A., Model for hydro and hydro-abrasive jet machining of carbon fiber reinforced plastic composites: NIST Special Publication no. 847 Jun 1993. p. 397-405, 1993.

Guha, S.K., Analysis of dynamic characteristics of hydrodynamic journal bearings with isotropic roughness effects: Wear v. 167 no. 2 Aug 2 1993. p. 173-179, 1993.

Guissard, A., Directional spectrum of the sea surface and wind scatterometry: International Journal of Remote Sensing v. 14 no. 8 May 20 1993. p. 1615-1633, 1993.

Gungor, Salih, Edwards, Lyndon, Effect of surface texture on the initiation and propagation of small fatigue cracks in a forged 6082 aluminium alloy: Materials Science & Engineering A, Structural Materials, Properties, Microstructure and Processing v. A160 no. 1 Jan 15 1993 p. 17-24, 1993.

## 1993 H-L

Haeusler, Gerd, Neumann, Jochen: Coherence radar, an accurate 3D sensor for rough surfaces: Proceedings of SPIE - The International Society for Optical Engineering v. 1822 1993. Bellingham, WA, p. 200-205, 1993.

Halstead, David M., DePristo, Andrew E., Thin film growth and the scattering of atoms from surface island defects: Surface Science v. 286 no. 3 May 1 1993. p. 275-289, 1993.

Ham-Su, Rosaura, Castano, Victor M., Studies on the behavior of the roughness of the fracture surfaces of silica glass: Materials Letters v. 16 no. 6 Jun 1993. p. 347-351, 1993.

Hammar, Laes, Reduction of head losses in tunnels by means of shotcrete: Proceedings of the 5th Engineering Foundation Conference Conference Location, Uppsala, Swed, Shotcrete for Underground Support Proc 5 Eng Found Conf 1993.

Hammecker, Claude, Mertz, Jean-Didier, Fischer, Christian, Jeannette, Daniel, Geometrical model for numerical simulation of capillary imbibition in sedimentary rocks: Transport in Porous Media v. 12 no. 2 Aug 1993. p. 125-141, 1993.

Han, Changyuan, Liu, Bin, Lu, Zhenwu, Zhang, Xiaohui, Gu, Quwu, Heterodyne common path surface profilometer: Guangxue Xuebao/Acta Optica Sinica v. 13 no. 7 Jul 1993. p. 670-672, 1993.

Harris, Lisa I., Oliver, Larry J., Flow study of in-service sanitary sewers rehabilitated with in-situ pipe: Proceedings of the International Conference on Pipeline Infrastructure II Proc Int Conf Pipeline Infrastruct 1993. ASCE, New York. p. 129-136, 1993.

Hashidate, Yoshio, Shioda, Kazunori, Nonaka, Shigeo, Experimental study on the flow behavior of a liquid film on an inclined downward-facing plate: Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B v. 59 no. 559 Mar 1993. p. 770-775.

Hautaniemi, J.A., Hero, H., Porcelain bonding on Ti, its dependence on surface roughness, firing time and vacuum level: Surface and Interface Analysis v. 20 no. 5 May 15 1993. p. 421-426, 1993.

Hegde, Rama I., Chonko, Mark A., Tobin, Philip J., Growth and surface morphology of thin silicon films using an atomic force microscope: Materials Research Society Symposium Proceedings v. 295 1993. Pittsburgh, PA, p. 65-70, 1993.

Hegner, Martin, Wagner, Peter, Semenza, Giorgio, Ultralarge atomically flat template-stripped Au surfaces for scanning probe microscopy: Surface Science v. 291 no. 1-2 Jul 1993. p. 39-46, 1993.

Heidemann, B., Tappe, T., Schmiedeskamp, B., Heinzmann, U., High resolution Rutherford backscattering spectroscopy studies on Mo/Si multilayers: Thin Solid Films v. 228 no. 1-2 May 15 1993. p. 60-63, 1993.

Heintze, M., Schmid, P.E., Levy, F., Weiss, P., Guy, R, Characterization of polycrystalline and amorphous silicon films by angle-resolved light scattering: Journal of Physics D, Applied Physics v. 26 no. 2 Feb 14 1993. p. 271-280, 1993.

Higuchi, Masatoshi, Sawada, Masato, Kuronuma, Yoichiro, Microstructure and electrical characteristics of sputtered indium tin oxide films: Journal of the Electrochemical Society v. 140 no. 6 Jun 1993. p. 1773-1775, 1993.

Hills, D. A., D. Nowell and A. Sackfield, Mechanics of elastic contacts: Butterworth-Heinemann, Oxford (1993).

Hino, T., Makabe, Y., Hirohata, Y., Yamashina, T., Surface roughness of Mo films prepared by magnetron sputtering: Thin Solid Films v. 229 no. 2 Jun 25 1993. p. 201-206, 1993.

Hiranaka, Makoto, Yokouchi, Hirotaka, Xifeng, Li, Kaito, Kouji, Tsuzaka, Hideo, Studies on bending at small hole drilling of printed wiring boards: Journal of the Japan Society of Precision Engineering/Seimitsu Kogaku Kaishi v. 59 no. 1 Jan 1993. p. 119-124.

Hirtz, A., Bonkhoff, K., Findenegg, G.H., Optical studies of liquid interfaces in amphiphilic systems, How wetting and adsorption are modified by surfactant aggregation: Advances in Colloid and Interface Science v. 44 May 24 1993. p. 241-281, 1993.

Hocheng, H., Puw, H. Y., Machinability of fiber-reinforced thermoplastics in drilling: Journal of Engineering Materials and Technology, Transactions of the ASME v. 115 no. 1 Jan 1993 p. 146-149, 1993.

Hockenhull, B.S., Kopalinsky, E.M., Oxley, P.L.B., Predicting wear for metal surfaces in sliding contact using a low-cycle fatigue wear model: Journal of Applied Mechanics, Transactions ASME v. 60 no. 1 Mar 1993. p. 85-92, 1993.

Hoefer, Stephan, Heil, Frank, Pandit, Madhukar, Kumaresan, Ramdas, Segmentation of textures with different roughness using the model of isotropic two-dimensional fractional Brownian motion: Image and Multidimensional Signal Processing Proceedings - ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing v. 5 1993. p. V-53-V-56, 1993.

Hopkins, Mark A., Mesoscale simulation of the arctic ice pack: Ice Mechanics - 1993 American Society of Mechanical Engineers, Applied Mechanics Division, AMD v. 163 1993. ASME, New York. p. 85-96, 1993.

Hopple, G.B., Keem, J.E., Loewenthal, S.H., Development of fracture resistant, multilayer films for precision ball bearings: Wear v. 162-64 pt B Apr 13 1993. p. 919-924, 1993.

Horvat, J., Surface and volume pinning of domain walls in amorphous ribbons: Journal of Magnetism and Magnetic Materials v. 123 no. 1-2 May 1 1993. p. 41-51, 1993.

Hsu, Tze-Ch, 'Internal-variables' approach in friction modeling of computer simulation in sheet-metal forming processes: Journal of Materials Processing Technology, v. 37 no. 1-4 Feb 1993. p. 95-114, 1993.

Hu, Jian, Breakdown analysis of multilayer amorphous silicon photoreceptors: Proceedings of SPIE - The International Society for Optical Engineering v. 1912 1993. Bellingham, WA, p. 245-249, 1993.

Hu, Yu-Kan, Liu, Wing Kam, ALE hydrodynamic lubrication finite element method with application to strip rolling: International Journal for Numerical Methods in Engineering v. 36 no. 5 Mar 15 1993. p. 855-880, 1993.

Huang, Dongzhou, Wang, Ton-Lo, Shahawy, Mohsen, Impact studies of multigirder concrete bridges: Journal of Structural Engineering v. 119 no. 8 Aug 1993. p. 2387-2402, 1993.

Huang, P., Wen, S. Z., Sectional micro-elastohydrodynamic lubrication: Journal of Tribology, Transactions of the ASME v. 115 no. 1 Jan 1993 p. 148-151, 1993.

Huang, T.H., Kuo, Cheng-Tzu, Lin, T.S., Tribological behaviour of chemical vapour deposition diamond films on various cutting tools: Surface & Coatings Technology v. 56 no. 2 Jan 9 1993. p. 105-108, 1993.

Huang, X., Haimson, B.C., Plesha, M.E., Qiu, X., Investigation of the mechanics of rock joints-part I laboratory investigation: International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts v. 30 no. 3 Jun 1993. p. 257-269, 1993.

Hueppauff, Martin, Bange, Klaus, Lengeler, Bruno, Density, thickness and interface roughness of SiO//2, TiO//2 and Ta//2O//5 films on BK-7 glasses analyzed by X-ray reflection: Thin Solid Films v. 230 no. 2 Aug 10 1993. p. 191-198, 1993.

Hunter, John E., Reconstructing collisions involving ice and slippery surfaces: Accident Reconstructions, Technology and Animation III SAE Special Publications no. 946 1993. SAE, p. 185-194, 1993.

Hylton, T.A., Van Tyne, C.J., Matlock, D.K, Frictional behavior of electrogalvanized sheet steels: Sheet Metal and Stamping Symposium SAE Special Publications no. 944 1993. SAE, Warrendale, PA, p. 241-253, 1993.

Ianno, N. J., Nafis, S., Snyder, Paul G., Johs, Blaine, Woollam, John A., In situ spectroscopic ellipsometry studies of electron cyclotron resonance (ECR) plasma etching of oxides of silicon and GaAs: Applied Surface Science, v. 63 no. 1-4 Jan 1 1993. p. 17-21.

Ichida, Yoshio, Kishi, Kozo, Hisayoshi, Sato, Nanotopography of ultraprecise ground surface of fine ceramics using atomic force microscope: CIRP Annals v. 42 no. 1 1993. p. 647-650, 1993.

Ida, Tomio, New proposal for efficiency scale-up formulae for hydraulic turbines: Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B v. 59 no. 560 Apr 1993. p. 1145-1152, 1993.

Igland, Ragnar T, Moan, Torgeir: Reliability analysis of deep water pipelines during laying for combined pressure, tension and bending loads: Proc Third 93 Int Offshore Polar Eng Conf 1993. Int Soc of Offshore and Polar Engineerns (ISOPE), P.O.Box 1107, Golden, CO, p. 613-621, 1993.

Ignatiev, M., Kovalev, E., Melekhin, I., Smurov, I. Yu, Sturlese, S., Investigation of the hardening of a titanium alloy by laser nitriding: Wear v. 166 no. 2 Jul 1 1993. p. 233-236, 1993.

Ihara, A., Watanabe, Hideo, Hashimoto, Hiroyuki, Hydraulic forces acting on a circular cylinder with surface source of minute air bubbles and its cavitation characteristics: Journal of Fluids Engineering, Transactions of the ASME v. 115 no. 2 Jun 1993. p. 275-282, 1993.

Ikonen, E., Riski, K., Gauge-block interferometer based on one stabilized laser and a white-light source: Metrologia v. 30 no. 2 May 1993. p. 95-104, 1993.

Ilvennoinen, R., Peiponen, K. -E., Ikonen, K., Asakura, T., Luostarinen, J., Gu, Cong, Fibre optic reflectometers: Optics and Lasers in Engineering v. 18 no. 1 1993 p. 15-24, 1993.

Imaduddin, S., Lad, R.J., Aluminum deposition on NiO(100), growth, structure and composition of the interface: Surface Science v. 290 no. 1-2 Jun 10 1993. p. 35-44, 1993.

Imanaka, Makoto, Kato, Toshiyuki, Hashimoto, Osamu, Hishida, Yuji, Ujihara, Shin, Development of laser-textured dull steel sheets with superior press formability: Sheet Metal and Stamping Symposium SAE Special Publications no. 944 1993. SAE, Warrendale, PA, p. 231-239, 1993.

Inoue, Hitoshi, Fukke, Hajime, Akagi, Motoo, Katsumoto, Masayuki, Polymer adsorption on a magnetic particle in a dispersion system: Journal of Magnetism and Magnetic Materials v. 118 no. 1-2 Jan 1 1993. p. 263-270, 1993.

Ismail, F., Elbestawi, M.A., Du, R., Urbasik, K., Generation of milled surfaces including tool dynamics and wear: Journal of Engineering for Industry, Transactions of the ASME v. 115 no. 3 Aug 1993. p. 245-252, 1993.

Itoh, Isao, Otoguro, Yasuo, Doi, Takao, Ikuta, Kazuo, Diffusion welding of zirconia and Al-Sn alloy in the atmosphere: Keikinzoku/Journal of Japan Institute of Light Metals v. 43 no. 3 Mar 1993. p. 136-138, 1993.

Itoh, Isao, Otoguro, Yasuo, Doi, Takao, Kimura, Syouji, Diffusion welding of Si//3N//4 and Al-Sn alloy in the atmosphere: Keikinzoku/Journal of Japan Institute of Light Metals v. 43 no. 5 May 1993. p. 258-262, 1993.

Jahanmir, S., Strakna, T.J., Quinn, G.D., Kopp, R.N., Yoon, S.C., Kumar, K.V., Effect of grinding on strength and surface integrity of silicon nitride, part II: NIST Special Publication no. 847 Jun 1993. p. 279-291, 1993.

Jeffery, A.J., Durucan, S., Measurement and characterization of tunnel roughness with respect to ventilation and heat flow theory: Proceedings of the US Mine Ventilation Symposium 1993. SME, Littleton, CO, p. 131-136, 1993.

Jellison, G.E. Jr., Keefer, M., Thornquist, L., Spectroscopic ellipsometry and interference reflectometry measurements of CVD silicon grown on oxidized silicon: Materials Research Society Symposium Proceedings v. 283 1993. Pittsburgh, PA, p. 561-566, 1993.

Johnson, F., Brisco, B., Brown, R.J., Evaluation of limits to the performance of the surface roughness meter: Canadian Journal of Remote Sensing v. 19 no. 2 Apr-May 1993. p. 140-145, 1993.

Johnson, M.B., Maier, U., Meier, H.-P., Salemink, H., Atomic-scale view of AlGaAs/GaAs multilayers with cross-sectional scanning tunneling microscopy: Journal of Crystal Growth v. 127 no. 1-4 Feb 2 1993. p. 1077-1082, 1993.

Jung, Chulwoo, Kim, Dongwoo, Kim, S.Y., Surface roughness dependence of the first-order probability density function for integrated speckle: Optics Communications v. 100 no. 5-6 Jul 15 1993. p. 508-517, 1993.

Jungemann, Chr., Emunds, A., Engl, W.L., Simulation of linear and nonlinear electron transport in homogeneous silicon inversion layers: Solid-State Electronics v. 36 no. 11 Nov 1993. p. 1529-1540, 1993.

Kachlishvili, T. Z., Relaxation processes and in-plane electron mobility limited by interface defects in CdTe-Cd//1// minus //xMn//xTe quantum wells: Solid State Communications v. 85 no. 3 Jan 1993 p. 267-271, 1993.

Kalmykov, A.I., Velichko, S.A., Tsymbal, V.N., Kuleshov, Yu.A., Weinman, J.A., Jurkevich, I., Observations of the marine environment from spaceborne side-looking real aperture radars: Remote Sensing of Environment v. 45 no. 2 Aug 1993. p. 193-208, 1993.

Kalshoven, James E., Dabney, Phillip W., Remote sensing of the earth's surface with an airborne polarized laser: IEEE Transactions on Geoscience and Remote Sensing v. 31 no. 2 Mar 1993. p. 438-446, 1993.

Kang, Suckchoon, Study of friction and wear characteristics of copper- and iron-based sintered materials: Wear v. 162-64 pt B Apr 13 1993. p. 1123-1128, 1993.

Karamis, M.B., Selcuk, B., Analysis of the friction behavior of bolted joints: Wear v. 166 no. 1 Jun 15 1993. p. 73-83, 1993.

Kardar, Mehran, Li, Hao, Confinement between rough substrates, Fluctuation-induced forces, and other manifestations: Materials Research Society Symposium Proceedings v. 290 1993. Pittsburgh, PA, p. 153-159, 1993.

Kato, Akira, Kawamura, Mitsuo, Damage monitoring of metal materials by laser speckle assisted by image processing techniques: Nippon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan Society of Mechanical Engineers, Part A v. 59 no. 563 Jul 1993. p. 1636-1641.

Kawagoe, Takeshi, Mizoguchi, Tadashi, Optical properties and growth process of thin copper films on glass substrate studied by in-situ ellipsometry: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 32 no. 2 Feb 1993. p. 935-939, 1993.

Kawamura, Tomoaki, Takenaka, Hisataka, Uneta, Makoto, Oshima, Masaharu, Fukuda, Yukio, Ohmachi, Yoshiro, Izumi, Koichi, Ishikawa, Tetsuya, Kikuta, Seishi, Zhang, Xiao Wei, X-ray standing wave analysis of GaAs/Si interface: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes v. 32 no. 1B Jan 1993. p. 622-625, 1993.

Kaye, Brian H., Applied fractal geometry and the fine particle specialist. Part I, Rugged Boundaries and rough surfaces: Particle & Particle Systems Characterization v. 10 no. 3 Jun 1993. p. 99-110, 1993.

Kaye, J.E., Yan, D.H., Popplewell, N., Balakrishnan, S., Thomson, D.J.I, Electronic system for surface roughness measurements in turning: International Journal of Electronics v. 74 no. 5 May 1993. p. 807-818, 1993.

Khalifa, M.A., Parametric study of cable-stayed bridge response due to traffic-induced vibration: Computers and Structures v. 47 no. 2 Apr 17 1993. p. 321-339, 1993.

Kim, D.E., Suh, N.P., Frictional behavior of extremely smooth and hard solids: Wear v. 162-64 pt B Apr 13 1993. p. 873-879, 1993.

Kim, V.D., Vardiyashvili, A.B., Fajziev, T.A., A study on drop condensation in solar greenhouses: Geliotekhnika no. 2 Mar-Apr 1993. p. 34-38, 1993.

Kinloch, A.J., Wang, Y., Williams, J.G., Yayla, P., Mixed-mode delamination of fibre composite materials: Composites Science and Technology v. 47 no. 3 1993. p. 225-237, 1993.

Kiselev, A.N., Velichko, A.A., Okomelchenko, I.A., High-resolution electron microscopy of epitaxial layers and interfaces in the CaF//2/Si(100) and CaF//2/Si/CaF//2/Si(100) heterosystems: Journal of Crystal Growth v. 129 no. 1-2 Mar 2 1993. p. 163-172.

Klumpp, Cassie C., Baird, Drew C, Calibration of Manning's roughness for a river reach: Proceedings - National Conference on Hydraulic Engineering pt 1 1993. ASCE, New York. p. 1073-1077, 1993.

Knotts, M.E., O'Donnell, K.A., Backscattering enhancement from a conducting surface with isotropic roughness: Optics Communications v. 99 no. 1-2 May 15 1993. p. 1-6, 1993.

Knowles, D.M., Downes, T.J., King, J.E., Crack closure and residual stress effects in fatigue of a particle-reinforced metal matrix composite: Acta Metallurgica et Materialia v. 41 no. 4 Apr 1993. p. 1189-1196, 1993.

Kobayashi, Hiroyuki, Ryuta, Jiro, Shingyouji, Takayuki, Shimanuki, Yasushi, Study of Si etch rate in various composition of SC1 solution: Japanese Journal of Applied Physics, Part 2, Letters v. 32 no. 1A-B Jan 15 1993. p. L45-L47, 1993.

Koinuma, H., Yoshimoto, M., Kawasaki, M., Ohkubo, H., Kanda, N., Gong, J.P., Pulsed laser deposition and atomic scale characterization of Perovskite oxide films: Materials Research Society Symposium Proceedings v. 285 1993. Pittsburgh, PA, p. 263-268, 1993.

Kola, R.R., Celler, G.K., Harriott, L.R., Roughness effects during focused ion beam repair of x-ray masks with polycrystalline tungsten absorbers: Materials Research Society Symposium Proceedings v. 279 1993. Pittsburgh, PA, p. 593-598, 1993.

Komaraiah, M., Reddy, P. Narasimha, Relative performance of tool materials in ultrasonic machining: Wear v. 161 no. 1-2 Apr 1 1993. p. 1-10, 1993.

Kominami, S., Yamada, H., Miyamoto, N., Takagi, K, Effects of underlayer roughness on Nb/AlOx/Nb junction characteristics: IEEE Transactions on Applied Superconductivity v. 3 no. 1 pt 4 Mar 1993. p. 2182-2186, 1993.

Konduri, I.M., Calizaya, F., Mousset-Jones, P., Danko, G., McPherson, M.J., Surface roughness characteristics for a mine airway in the Sunshine Mine: Proceedings of the US Mine Ventilation Symposium 1993. SME, Littleton, CO, p. 137-143, 1993.

Korytar, Dusan, Hrivnak, Milan, Experimental and computer simulated Makyoh images of semiconductor wafers: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 32 no. 2 Feb 1993. p. 693-698, 1993.

Kouwen, N., Soulis, E.D., Pietroniro, A., Donald, J., Harrington, R.A., Grouped response units for distributed hydrologic modeling: Journal of Water Resources Planning and Management v. 119 no. 3 May-Jun 1993. p. 289-305, 1993.

Kunze, Chr: Thin film conductivity, impurities and surface roughness: Solid State Communications v. 87 no. 4 Jul 1993. p. 359-362, 1993.

Kurita, Masnori, Yamahita, Hiromasa, Optical surface roughness measurement using a two-dimensional Gaussian function: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 59 no. 560 Apr 1993. p. 1086-1090.

Kurtin, K. Alan, Childs, D., San Andres, Luis, Hale, K, Experimental versus theoretical characteristics of a high-speed hybrid (combination hydrostatic and hydrodynamic) bearing: Journal of Tribology, Transactions of the ASME v. 115 no. 1 Jan 1993 p. 160-169, 1993.

Kusy, Robert P., Stuart, James M., Whitley, John Q., Saunders, Carl R., Laser specular reflectance and the optical rms roughness of alumina: Journal of the American Ceramic Society v. 76 no. 2 Feb 1993. p. 299-304, 1993.

Ladikov-Roev, Yu.P., Nauryzbaeva, S.I., Panchuk, V.I., Chechko, G.A., Mathematical model of rain soil erosion and its computer realization: Avtomatika no. 2 Mar-Apr 1993. p. 56-62, 1993.

Lai, F.D., Wu, T.I., Wu, J.K., Surface modification of Ti-6Al-4V alloy by salt cyaniding and nitriding: Surface & Coatings Technology v. 58 no. 1 Jun 18 1993. p. 79-81, 1993.

Lai, M.O., Nee, A.Y.C., Properties of a repeatedly ballised hole surface: Journal of Materials Processing Technology v. 37 no. 1-4 Feb 1993. p. 149-156, 1993.

Lai, M.O., Oh, J.T., Nee, A.Y.C., Fatigue properties of holes with residual stresses: Engineering Fracture Mechanics v. 45 no. 5 Jul 1993. p. 551-557, 1993.

Lange, D.A., Jennings, H.M., Shah, S.P., Analysis of surface roughness using confocal microscopy: Journal of Materials Science v. 28 no. 14 Jul 15 1993. p. 3879-3884, 1993.

Lange, David A., Jennings, Hamlin M., Shah, Surendra P., Relationship between fracture surface roughness and fracture behavior of cement paste and mortar: Journal of the American Ceramic Society v. 76 no. 3 Mar 1993. p. 589-597, 1993.

Larkins, E.C., Rothemund, W., Maier, M., Wang, Z.M., Ralston, J.D., Jantz, W., MBE growth optimization of In//yGa//1// minus //yAs/GaAs multiple quantum well structures: Journal of Crystal Growth v. 127 no. 1-4 Feb 2 1993. p. 541-545, 1993.

Lasia, A., Study of electrode activities towards the hydrogen evolution reaction by a.c. impedance spectroscopy: International Journal of Hydrogen Energy v. 18 no. 7 Jul 1993. p. 557-560, 1993.

Lavrinenko, V.I., Shepelev, A.A., Shklyarenko, V.V., Some features of the diamond grinding of magnetically hard alloys: Sverkhtverdye Materialy no. 1 Jan-Feb 1993. p. 52-55, 1993.

Lebland, F., Wang, Z.Z., Flicstein, J., Licoppe, C., Nissim, Y.I., Bulk and surface properties of RTCVD Si//3N//4 films for optical device applications: Applied Surface Science, v. 69 no. 1-4 May 2 1993. p. 198-203.

Ledesma Vazquez, J., D.M. Huerta, Santana, Slides and slumps on the coastal zone between San Miguel and El Descanso, Baja California, Mexico: Proceedings of the Symposium on Coastal and Ocean Management 1993. ASCE, New York. p. 30-42, 1993.

Lee, S.S.G., Tam, S.C., Loh, N.H., Ball burnishing of 316L stainless steel: Journal of Materials Processing Technology v. 37 no. 1-4 Feb 1993. p. 241-251, 1993.

Li, Duoxing, Ping, Dehai, Ning, Xiaoguang, Ye, Hengqiang, Fine structures of both interfaces and interfacial reaction products: Acta Metallurgica Sinica (English Edition), Series A, Physical Metallurgy & Materials Science v. 6A no. 1 Jan 1993. p. 1-20, 1993.

Li, J. P., Yih, P. H., Steckl, A. J, Thickness determination of SiC-on-Si thin films by anisotropic reactive ion etching and preferential wet etching: Journal of the Electrochemical Society v. 140 no. 1 Jan 1993 p. 178-182, 1993.

Liou, Tong-Miin, Hwang, Jenn-Jiang, Effect of ridge shapes on turbulent heat transfer and friction in a rectangular channel: International Journal of Heat and Mass Transfer v. 36 no. 4 Mar 1993. p. 931-940, 1993.

Liu, Jiang, Son, U.T., Stepanova, A.N., Christensen, K.N., Wojak, G.W., Givargizov, E.I., Bachmann, K.J., Hren, John J., Formation of SiC films on silicon field emitters: Thermodynamics and Kinetics, Materials Research Society Symposium Proceedings v. 311 1993. Pittsburgh, PA, p. 21-26, 1993.

Los, P., Rami, A., Lasia, A., Hydrogen evolution reaction on Ni-Al electrodes: Journal of Applied Electrochemistry v. 23 no. 2 Feb 1993. p. 135-140, 1993.

Lovergine, N., Manno, D., Mancini, A.M., Vasanelli, L, Surface structural and morphological characterization of ZnTe epilayers grown on left brace 100 right brace GaAs by MOVPE: Journal of Crystal Growth v. 128 no. 1-4 pt 2 Mar 1 1993. p. 633-638, 1993.

Lowes, Theodore D., Cassidy, Daniel T., Dependence of photoetching no.-InP on surface preparation and electrolyte metal ion impurities: Journal of the Electrochemical Society v. 140 no. 1 Jan 1993 p. 256-262, 1993.

Lu, Jyh-Woei, Sargent, Gordon A., Conrad, Hans, Study of the fundamental mechanisms of erosion using Hertzian fracture tests: Wear v. 162-64 pt B Apr 13 1993. p. 856-863, 1993.

Lu, Z., Feigelson, R.S., Route, R.K., DiCarolis, S.A., Hiskes, R., Jacowitz, R.D., Solid source MOCVD for the epitaxial growth of thin oxide films: Journal of Crystal Growth v. 128 no. 1-4 pt 2 Mar 1 1993. p. 788-792, 1993.

Lukhvich, A.A., Novikov, S.A., Khil'ko, G.I., Surface roughness testing using the acoustic microscopy method: Defektoskopiya no. 2 Feb 1993. p. 31-38, 1993.

Lunt, David L., Bender, John W., Ewing, Donald G., McKinney, Wayne R., XUV synchrotron optical components for the Advanced Light Source, fabrication and metrology: Proceedings of SPIE - The International Society for Optical Engineering v. 1740 1993, Bellingham, WA, p. 161-172, 1993.

# 1993 M-S

Maaza, M., Farnoux, B., Samuel, F., Sella, C., Trocellier, P., Effect of mechanical polishing on the surface structure of glasses studied by grazing angle neutron reflectometry: Optics Communications v. 100 no. 1-4 Jul 1 1993. p. 220-230, 1993.

Magnea, N., Tardot, A., Mariette, H., Pelekanos, N., Structural and electronic properties of CdTe-based heterostructures: Materials Science & Engineering B, Solid-State Materials for Advanced Technology v. B16 no. 1-3 Jan 30 1993. p. 71-78, 1993.

Mahesha Ranasoma, K.I., Sleath, J.F.A., Velocity measurements close to rippled beds: Proceedings of the Coastal Engineering Conference v. 2 1993. ASCE, New York. p. 2383-2389, 1993.

Maidl, B., Koenning, R., New developments in tunnel lining by help of steel fibre reinforced concrete: Shotcrete for Underground Support Proc 5 Eng Found Conf 1993. ASCE, New York. p. 265-284,1993.

Mailhol, Jean-Claude, Gonzalez, Juan-Manuel, Furrow irrigation model for real-time applications on cracking soils: Journal of Irrigation and Drainage Engineering v. 119 no. 5 Sep-Oct 1993. p. 768-783, 1993.

Mainsah, Evaristus, and Stout, K.J., Second international workshop on the development of methods for the characterization of roughness in 3-D: Precision Engineering, v. 15, no. 4, p. 287-288, (1993).

Major, D.J., Larney, F.J., Brisco, B., Lindwall, C.W., Brown, R.J., Tillage effects on radar backscatter in souther Alberta: Canadian Journal of Remote Sensing v. 19 no. 2 Apr-May 1993. p. 170-176, 1993.

Makino, T., Morohoshi, S., Taniguchi, S., Application of average flow model to thin film gas lubrication: Journal of Tribology, Transactions of the ASME v. 115 no. 1 Jan 1993 p. 185-190, 1993.

Makino, Toshiro, Kaga, Kunihiko, Murata, Hidetaro, Numerical experiment on transient behavior of reflection characteristics of real surfaces of metallic materials: Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B v. 59 no. 560 Apr 1993. p. 1252-1257.

Malburg, M.C., and J. Raja, Characterzation of surface texture generated by plateau honing process: Annals of the CIRP, 42/1, p. 637-639, 1993.

Malyshev, E.K., Chuklyaev, S.V., Grudskij, M.Ya., Grigor'ev, M.V., Effect of surface conditions on the yield of true secondary electrons from metallic targets, exposed to photons and fast electrons: Atomnaya Energiya v. 74 no. 3 Mar 1993. p. 262-267, 1993.

Marcus, K. and Allen, C., Effect of fillers on the friction and wear behaviour of ultrahigh molecular weight polyethylene during water-lubricated reciprocating sliding wear: Wear, 162-164, p. 1091-1102 (1993).

Mastensbroek, C., Effect of waves on surges in the north sea: Proceedings of the Coastal Engineering Conference v. 1 1993. ASCE, New York. p. 874-880, 1993.

Matsui, Satoshi, Horiuchi, Takeshi, Study on rotation type single point diamond dressing - Effect on dimensional accuracy and surface roughness: Journal of the Japan Society of Precision Engineering/Seimitsu Kogaku Kaishi v. 59 no. 3 Mar 1993. p. 461-466.

Matsui, Toshiyuki, Suzuki, Takeshi, Ishii, Takashi, Tsuda, Koichi, Nagano, Mcgumi, Mukac, Kazuo, Morphology of barrier layer formed on YBCO: IEEE Transactions on Applied Superconductivity, v. 3 no. 1 pt 3 Mar 1993. p. 1294-1297, 1993.

Matsumoto, Osamu, Kajita, Shuuji, Tani, Kazuo, Estimation and control of the attitude of a dynamic mobile robot using internal sensors: Advanced Robotics v. 7 no. 2 1993. p. 159-178, 1993.

Matsuoka, Hironori, Katsuki, Akira, Furumiya, Yoshihiro, Yamamoto, Fukusaburo, Fundamental research on hard materials for hobs: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 59 no. 559 Mar 1993. p. 903-908.

Matsuyama, Hidenobu, Sakamoto, Hiroki, Shibata, Kimihiro, Study on the relationship between laser beam polarization and absorptivity (1st Report, effect of surface roughness): Nippon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan Society of Mechanical Engineers, Part A v. 59 no. 559 Mar 1993. p. 876-880.

Matsuzaki, Yoshio, Funabashi, Koichi, Hosokawa, Kazuo, Effect of surface roughness on contact pressure of static seals. (Effect of tangential force on conical inside-seal surface): JSME International Journal, Series 3, Vibration, Control Engineering, Engineering for Industry v. 36 no. 1 Mar 1993. p. 119-124, 1993.

Mattheis, Frank, Krebs, Hans-Ulrich, Conditions for the textured growth of Y-Ba-Cu-O films on Zr foils: Journal of Alloys and Compounds v. 195 no. 1-2 May 10 1993. p. 275-278, 1993.

Mattsson, Lars, Wågberg, Pia, Assessment of surface finish on bulk scattering materials, a comparison between optical laser stylus and mechanical stylus profilometers: Precision Engineering v. 15 no. 3 Jul 1993. p. 141-149, 1993.

Maxian, Suzanne H., Zawadsky, Joseph P., Dunn, Michael G, In vitro evaluation of amorphous calcium phosphate and poorly crystallized hydroxyapatite coatings on titanium implants: Journal of Biomedical Materials Research v. 27 no. 1 Jan 1993 p. 111-117, 1993.

Mestre, M. and Abou-Kandil, H., Linear prediction of signals applied to dimensional metrology of industrial surfaces: Measurement, 11, p. 119-134 (1993).

Meyer, Ernst, Haefke, Henry, Guentherod, Hans-Joachim, Anderson, Olaf, Bange, Klaus, Surface topography of polished and oxide-coated BK-7 glasses investigated by atomic force microscopy: Glastechnische Berichte v. 66 no. 2 Feb 1993. p. 30-37, 1993.

Michalski, Jacek, Pawlus, Pawel, Characterization of the shape of the roughness profile ordinate distribution of honed cylinder surfaces: Wear v. 161 no. 1-2 Apr 1 1993. p. 135-143, 1993.

Miki-Yoshida, M., Andrade, E., Growth and structure of tin dioxide thin films obtained by an improved spray pyrohydrolysis technique: Thin Solid Films v. 224 no. 1 Feb 25 1993. p. 87-96, 1993.

Milhailova, D.V., Fuks, I.M., Emissivity of a statistically irregular surface taking into account multiple scattering: Radiotekhnika i Elektronika v. 38 no. 6 Jun 1993. p. 1016-1025, 1993.

Ming-Chang, Jeng, Ji-Liang, Doong, Chih-Wen, Yang, Effects of carbon content and microstructure on the metal removal rate in electrochemical machining: Journal of Materials Processing Technology v. 38 no. 3 May 1993. p. 527-538, 1993.

Mirin, Richard, Krishnamurthy, Mohan, Ibbetson, James, Gossard, Arthur, English, John, Petroff, Pierre, Temperature dependent quasi-periodic facetting of AlAs grown by MBE on (100)GaAs substrates: Common Themes and Mechanisms of Epitaxial Growth, Materials Research Society Symposium Proceedings v. 312 Apr 13-15 1993. Pittsburgh, PA, p. 273-277, 1993.

Morita, Kazuki, Umezawa, Akira, Yamato, Shinji, Makishima, Akio, Surface roughness of yttria-containing aluminosilicate glass-ceramics as indicative of their machinability: Journal of the American Ceramic Society v. 76 no. 7 Jul 1993. p. 1861-1864, 1993.

Moyer, Mike, Improving gear manufacturing quality with surface texture measurement: Gear Technology v. 10 no. 2 Mar-Apr 1993. p. 30-32, 1993.

Munns, G.O., Sherwin, M.E., Kwon, Y., Brock, T., Chen, W.L., Pavlidis, D., Haddad, G.I., Parametric investigation of InGaAs/InAlAs HEMTs grown by CBE: Journal of Crystal Growth v. 127 no. 1-4 Feb 2 1993. p. 25-28, 1993.

Munoz-Carpena, Rafael, Parsons, John E., Gilliam, J. Wendell, Numerical approach to the overland flow process in vegetative filter strips: Transactions of the ASAE v. 36 no. 3 May-Jun 1993. p. 761-770, 1993.

Nagase, Y., Sawaki, Y., Yoshida, H., Range-pair-counting fatigue gage: Experimental Mechanics v. 33 no. 3 Sep 1993. p. 242-248, 1993.

Naik, A.R., Pande, S.S., Somasundaram, S., Experimental investigation of the through-feed centreless-grinding process: Journal of Materials Processing Technology v. 36 no. 2 Jan 1993. p. 125-140, 1993.

Nait-Laziz, H., Bouarab, S., Demangeat, C., Mokrani, A., Dreysse, H., Pd polarization at the Pd/Fe interface: Journal of Magnetism and Magnetic Materials v. 118 no. 3 Jan 2 1993 p. 365-372, 1993.

Naito, Kunio, Ogo, Kazutaka, Konaga, Tetsuro, Abe, Tadayuki, Kanda, Keiichi, Matsuoka, Kazuhiko, Development of ball end milling for fine finish, high-efficiency: Journal of the Japan Society of Precision Engineering/ Seimitsu Kogaku Kaishi v. 59 no. 4 Apr 1993. p. 649-654.

Nakajima, Akira, Mawatari, Toshifumi, Effects of combination of surface roughness and running-in on rolling contact fatigue (in the case of axially ground steel rollers): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 59 no. 561 May 1993. p. 197-202.

Nakakita, Eiichi, Murata, Noriyasu, Ikebuchi, Shuichi, Shiiba, Michiharu, Takasao, Takuma, Fundamental investigation for estimating three-dimensional wind velocity in wide area using reflectivity information from spaceborne radar: International Conference on Radar Meteorology 1993. American Meteorological Soc, Boston, MA p. 424-426, 1993.

Nakano, Hidetoshi, Nagai, Satoshi, Crack measurements by laser ultrasonic at high temperatures: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 32 no. 5B May 1993. p. 2540-2542, 1993.

Nakazono, Atsuyuki, Sakanashi, Nobuhiro, Effect of surface roughness of cold rolled steel sheets on infrared emissivity: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 59 no. 559 Mar 1993. p. 963-966.

Nam, H.G., Chung, I., Bene, R.W., Dependences of titanium silicide properties on the ratio of silicon to titanium used for electron-beam coevaporation onto heated substrates: Thin Solid Films v. 227 no. 2 May 10 1993. p. 153-166, 1993.

Namba, Y., Abe, M., Kobayashi, A., Ultraprecision grinding of optical glasses to produce super-smooth surfaces: CIRP Annals v. 42 no. 1 1993. p. 417-420, 1993.

Naot, Dan, Nezu, Iehisa, Nakagawa, Hiroji, Hydrodynamic behavior of compound rectangular open channels: Journal of Hydraulic Engineering v. 119 no. 3 Mar 1993. p. 390-408, 1993.

Navar, Jose, Causes of stemflow variation in three semi-arid growing species of northeastern Mexico: Journal of Hydrology v. 145 no. 1-2 May 1 1993. p. 175-190, 1993.

Nayak, S., Redwing, J.M., Kuech, T.F., Phang, Y.-H., Savage, D.E., Lagally, M.G., X-ray diffraction determination of interface roughness in GaAs/Al//xGa//1// minus //xAs multilayers: Common Themes and Mechanisms of Epitaxial Growth, Materials Research Society Symposium Proceedings v. 312 Apr 13-15 1993. Pittsburgh, PA, p. 137-143, 1993.

Neimeyer, R., Smith, R.N., Kaminski, D.A., Effects of operating parameters on surface quality for laser cutting of mild steel: Journal of Engineering for Industry, Transactions of the ASME v. 115 no. 3 Aug 1993. p. 359-362, 1993.

Nemeth-Sallay, M., Minchev, G. M., Podor, B., Pramatarova, L. D., Szabo, J., Szentpali, B, Investigation of the surface preparation of GaAs substrates for MBE and VPE with whole sample optical reflection: Journal of Crystal Growth v. 126 no. 1 Jan 1 1993 p. 70-76, 1993.

Ngo, Phuong-Anh P., Cheever, G. Dale, Ottaviani, Robert A., Malinski, Tadeusz, Development of a predictive model for the changes in roughness that occurs during the painting process: Journal of Coatings Technology v. 65 no. 821 Jun 1993. p. 29-37, 1993.

Ni, Yushan, Cheng, Guangxu, Kuang, Zhenbang, Materials problems for the development of InGaAs/InAlAs HEMT technology: Acta Metallurgica Sinica (English Edition), Series A, Physical Metallurgy & Materials Science v. 6A no. 3 May 1993. p. 172-178, 1993.

Noguchi, Minori, Kembo, Yukio, Fine particle inspection down to 38 nm on bare wafer with micro roughness by side-scattering light detection: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes v. 32 no. 1B Jan 1993. p. 352-357, 1993.

Nowicki, Bogdan, Szafarczyk, Maciej, New method of free form surface honing: CIRP Annals v. 42 no. 1 1993. p. 425-428, 1993.

Ogawa, Kazuo, Misawa, Akihiro, Takashi, Masahisa, Kunio, Takeshi, Effects of submicro structural parameter for crack propagation resistance in epoxy resin: Nippon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan Society of Mechanical Engineers, Part A v. 59 no. 560 Apr 1993. p. 8-13.

Ogilvy, J. A., Predicting the friction and durability of MoS//2 coatings using a numerical contact model: Wear v. 160 no. 1 Jan 2 1993 p. 171-180, 1993.

Okulov, A. Yu., Scaling of diode-array-pumped solid-state lasers via self-imaging: Optics Communications v. 99 no. 5-6 Jun 15 1993. p. 350-354, 1993.

Olimpiev, V.V., Efficiency of intensification of heat exchange by means of fuel elements roughness in WWER-1000 reactor: Teploenergetika no. 2 Feb 1993. p. 56-58, 1993.

Orr, B.G., STM study of molecular-beam epitaxy growth of GaAs: Joumal of Crystal Growth v. 127 no. 1-4 Feb 2 1993. 1032p, 1993.

Orr, B.G., Sudijono, J., Johnson, M.D., Dynamical transition to step-flow growth during homoepitaxy of GaAs(001): Common Themes and Mechanisms of Epitaxial Growth, Materials Research Society Symposium Proceedings v. 312 Apr 13-15 1993. Pittsburgh, PA, p. 15-22, 1993.

Paloscia, S., Pampaloni, P., Chiarantini, L., Coppo, P., Gagliani, S., Luzi, G, Multifrequency passive microwave remote sensing of soil moisture and roughness: International Journal of Remote Sensing v. 14 no. 3 Feb 1993. p. 467-483, 1993.

Panagopoulos, C.N., Christou, G., Daurelio, G., Laser treatment of zinc coated aluminium: Transactions of the Institute of Metal Finishing v. 71 pt 2 May 1993. p. 65-67, 1993.

Paopongsawan, P., Fletcher, W.K., Distribution and dispersion of gold in point bar and pavement sediments of the Huai Hin Laep, Loei, northeastern Thailand: Journal of Geochemical Exploration v. 47 no. 1-3 Apr 1993. p. 251-268, 1993.

Papaliangas, T., Hencher, S.R., Lumsden, A.C., Manolopoulou, S., Effect of frictional fill thickness on the shear strength of rock discontinuities: International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts v. 30 no. 2 Apr 1993. p. 81-91, 1993.

Paul, D.J., Cleaver, J.R.A., Ahmed, H., Fabrication of wires in silicon germanium material: Microelectronic Engineering v. 21 no. 1-4 Apr 1993. p. 349-352, 1993.

Paul, Tsao, Jeffrey, Kisker, David W., Zangwill, Andrew, and Kuech, Thomas, eds., Common Themes and Mechanisms of Epitaxial Growth: Materials Research Society Symposium Proceedings v. 312 Apr 13-15 1993. Pittsburgh, PA, 344p, 1993.

Paynter, Gerald C., Treibet, David A., Kneeling, W. David, Modeling supersonic inlet boundary-layer bleed roughness: Journal of Propulsion and Power v. 9 no. 4 Jul-Aug 1993. p. 622-6217, 1993.

Perrais, J., Ledion, J., Sprauel, J.M, Mise en compression par brossage de surfaces d'acier (surface prestressing of steel components by brushing): Materiaux et Techniques v. 81 no. 4-5 Apr-May 1993. p. 13-18, 1993.

Persson, Ulf, Measurement of surface roughness on rough machined surfaces using spectral speckle correlation and image analysis: Wear v. 160 no. 2 Feb 1 1993 p. 221-225, 1993.

Pevzner, B.Z., Azbel', A. Yu., Model of coating formation from glass powder during heating: Fizika i Khimiya Stekla v. 19 no. 1 Jan-Feb 1993. p. 169-189, 1993.

Pezzotti, G., Lee, B.-T., Hiraga, K., Nishida, T., Quantitative evaluation of microstructure in Si//3N//4/SiC platelet and particulate composites: Journal of Materials Science v. 28 no. 17 Sep 1 1993. p. 4787-4798, 1993.

Pham, V.V., Razafindratsita, R., Simonne, J.J., Molecular simulation, A microscopic approach to study the growth of native silicon oxide: Materials Science & Engineering B, Solid-State Materials for Advanced Technology v. B17 no. 1-3 Feb 28 1993. p. 181-184, 1993.

Pitschke, W., Hermann, H., Mattem, N, Microabsorption of scattered X-rays and its dependence on incidence angle in the nonsymmteric reflection case: Journal of Applied Crystallography v. 26 pt 1 Feb 1 1993 p. 132-134, 1993.

Pokrovkskij, V.I., Goman, V.V., Tsil', E.A., Evaluating of forging tool quality according to flash size: Kuznechno-Shtampovochnoe Proizvodstvo no. 2 Feb 1993. p. 21-22, 1993.

Polchiopek, Stanley W., Bernstein, Gary H., Kwor, Richard Y., Properties of nitrogen-implanted SOI substrates: IEEE Transactions on Electron Devices v. 40 no. 2 Feb 1993. p. 385-391, 1993.

Polijaniuk, Andrzej, Kaczmarek, Jan, Novel stage for ultrasonic measurement of real contact area between rough and flat parts under quasi-static load: Joumal of Testing & Evaluation v. 21 no. 3 May 1993. p. 174-177, 1993.

Pomeroy, J.W., Gray, D.M., Landine, P.G., Prairie blowing snow model, characteristics, validation, operation: Journal of Hydrology v. 144 no. 1-4 Apr 1993. p. 165-192, 1993.

Pong, Chungdee, Feigelson, Robert S., DeMattei, Robert C., Epitaxial growth of high quality ZnSe and ZnSe/ZnS superlattices for optical processing: Journal of Crystal Growth v. 128 no. 1-4 pt 2 Mar 1 1993. p. 650-654, 1993.

Pourdeyhimi, B., Sobus, J., Xu, B., Evaluating carpet appearance loss, surface intensity and roughness: Textile Research Journal v. 63 no. 9 Sep 1993. p. 523-535, 1993.

Prange, A., Kramer, K., Reus, U., Boron nitride sample carriers for total-reflection x-ray fluorescence: Spectrochimica Acta, Part B, Atomic Spectroscopy v. 48 no. 2 Feb 1993. p. 153-161, 1993.

Proctor, Thomas D., Slipping accidents in Great Britain - an update: Safety Science v. 16 no. 3-4 Jul 1993. p. 367-377, 1993.

Prokes, S.M., ai, A.K., Comparison of two epitaxial formation mechanisms in the SiGe system: Common Themes and Mechanisms of Epitaxial Growth, Materials Research Society Symposium Proceedings v. 312 Apr 13-15 1993. Pittsburgh, PA, p. 59-64, 1993.

Prudon, G., Some examples of depth resolution in SIMS analysis: Applied Surface Science, v. 63 no. 1-4 Jan 1 1993. p. 62-69.

Qiu, X., Plesha, M.E., Huang, X., Haimson, B.C., Investigation of the mechanics of rock joints-part ii. analytical investigation: International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts v. 30 no. 3 Jun 1993. p. 271-287, 1993.

Radlinski, A.P., Cadman, S.J., Tilt and drainage ratio in sedimentary basins: AAPG Bulletin (American Association of Petroleum Geologists) v. 77 no. 1 Jan 1993. p. 1-8, 1993.

Rahul Amin, M., Natural convection heat transfer and fluid flow in an enclosure cooled at the top and heated at the bottom with roughness elements: International Joumal of Heat and Mass Transfer v. 36 no. 10 Jul 1993. p. 2707-2710, 1993.

Rajagopalan, S., Mitra, U., Pan, S., Gupta, K., Lin, C.M., Sery, G., Mittal, S., Hasserjian, K., Lo, W.J., Neubauer, G., Reaction of DI water and Silicon and its effect on gate oxide integrity: Annual Proceedings - Reliability Physics (Symposium) 1993. IEEE, Piscataway, NJ. p. 28-31, 1993.

Ramgulam, R.B., Amirbayat, J., Porat, I., Measurement of fabric roughness by a noncontact method: Journal of the Textile Institute v. 84 no. 1 1993. p. 99-106, 1993.

Rao, A. Ramamohana, Mohanram, P. V., Study of mixed lubrication parameters of journal bearings: Wear v. 160 no. 1 Jan 2 1993 p. 111-118, 1993.

Recum, A.F., Opitz, H., Wu, E., Collagen types I and III at the implant/tissue interfacevon: Journal of Biomedical Materials Research v. 27 no. 6 Jun 1993. p. 757-761, 1993.

Reed, T.D., Pilehvari, A.A., New model for laminar, transitional, and turbulent flow of drilling muds: Drilling Conference - Proceedings 1993. Soc of Petroleum Engineers of AIME, Richardson, TX, p. 39-52, 1993.

Reible, D.D., Savant-Malhiet, S.A., Comparison of physical transport processes in noncohesive river sediments: Journal of Environmental Engineering v. 119 no. 1 Jan-Feb 1993. p. 90-102, 1993.

Ren, F., Pearton, S.J., Lothian, J.R., Abernathy, C.R., Hobson, W.S., Reduction of sidewall roughness during dry etching of SiO//2: Chemical Perspectives of Microelectronic Materials III, Materials Research Society Symposium Proceedings v. 282 1993. Pittsburgh, PA, p. 529-535, 1993.

Rezchikov, A.F., Tugin, V.V., Ul'yanov, S.S., Surface microprofile measurements by diffraction of a strong focused laser beam: Pribory i Sistemy Upravleniya no. 1 Jan-Feb 1993. p. 125-131, 1993.

Rosén, B.-G., Representation of three-dimensional surface topography in CAD systems and image-processing software: Intl. Jour. Mach. Tools Manufact., v. 33, p. 307-320, 1993.

Rowe, W.B., Morgan, M.N., Qi, H.S., Zheng, H.W., Effect of deformation on the contact area in grinding: CIRP Annals v. 42 no. 1 1993. p. 409-412, 1993.

Ruhul Amin, M., Natural convection heat transfer in enclosures fitted with a periodic array of hot roughness elements at the bottom: International Journal of Heat and Mass Transfer v. 36 no. 3 Feb 1993. p. 755-763, 1993.

Russ, John C., Light scattering from fractal surfaces: Journal of Computer-Assisted Microscopy v. 5 no. 2 Jun 1993. p. 171-189, 1993.

Russek, Stephen E., Roshko, Alexana, Sanders, Steven C., Rudman, David A., Ekin, J.W., Moreland, John, Growth of laser ablated YBa//2Cu//3O//7// minus // delta films as examined by RHEED and scanning tunneling microscopy: Materials Research Society Symposium Proceedings v. 285 1993.Pittsburgh, PA. p. 305-310, 1993.

Saito, Nagao, Mohri, Naotake, Saiki, Hideki, Ishiguro, Teruo, Strength deterioration of sintered TiB//2 produced by EDM and its recovering technology: Journal of the Japan Society of Precision Engineering/Seimitsu Kogaku Kaishi v. 59 no. 2 Feb 1993. p. 293-298.

Sakai, Katsura, Kingetsu, Toshiki, Structures of Co/Ag metallic superlattices grown by molecular beam epitaxy: Journal of Crystal Growth v. 126 no. 2-3 Jan 2 1993 p. 184-198, 1993.

Sallet, V., Druilhe, R., Bouree, J.E., Triboulet, R., Acher, O., Yakovlev, V., Drevillon, B., In situ reflectance anisotropy studies of the growth of CdTe and other compounds by MOCVD: Materials Science & Engineering B, Solid-State Materials for Advanced Technology v. B16 no. 1-3 Jan 30 1993. p. 118-122, 1993.

Sato, Akinobu, Tsukamoto, Yuji, Observation of changes in surface structure of sputtered glasses by AFM upon water adsorption: Nippon Seramikkusu Kyokai Gakujutsu Ronbunshi/Journal of the Ceramic Society of Japan v. 101 no. 1172 Apr 1993. p. 400-404, 1993.

Sato, Yukio, Hamanaka, Ken-ichiro, Quasi-turbulent boundary layer of oscillating flow over ripples: Proceedings of the Coastal Engineering Conference v. 3 1993. ASCE, New York. p. 2424-2437, 1993.

Sawa, M., Maeda, Y., Masuda, M., Ito, R., Development of an advanced tool-setting device for diamond turning: CIRP Annals v. 42 no. 1 1993. p. 87-90, 1993.

Saxena, Vikas Kumar, Malakondaiah, G., Radhakrishnan, V.M., Rao, P. Rama, On the fatigue crack growth resistance of upper bainite-martensite in an AISI 4330 steel: Scripta Metallurgica et Materialia v. 28 no. 10 May 15 1993. p. 1257-1260, 1993.

Scheckler, Edward W., Shukuri, Shoji, Takeda, Eiji, Molecular scale E-beam resist development simulation for pattern fluctuation analysis: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes v. 32 no. 1B Jan 1993. p. 327-333, 1993.

Schmidt, Christoph F., Svoboda, Karel, Lei, Ning, Petsche, Irena B., Berman, Lonny E., Safinya, Cyrus R., Grest, Gary S., Existence of a flat phase in red cell membrane skeletons: Science v. 259 no. 5097 Feb 12 1993. p. 952-955, 1993.

Schwarz, U.D., Haefke, H., Guntherodt, H.-J., Bohonek, J., Steiger, R., Atomic force microscopy study of cubic and octahedral AgBr microcrystals: Journal of Imaging

Science and Technology v. 37 no. 4 Jul-Aug 1993. p. 344-347, 1993.

Schwenke, H., Bormann, R., Knoth, J., Prange, A., Some potential developments for trace element and surface analysis using a grazing incident x-ray beam: Spectrochimica Acta, Part B, Atomic Spectroscopy v. 48 no. 2 Feb 1993. p. 293-299, 1993.

Scott, D. A., Brandt, M., Dorien-Brown, B., Valentine, B., De, P., Laser modification of metal surfaces: Optics and Lasers in Engineering v. 18 no. 1 1993 p. 1-13, 1993.

Sharf, Geulah, Peleg, Mordechai, Livnat, Michael, Luria, Menachem, Plume rise measurements from large point sources in Israel: Atmospheric Environment, Part A, General Topics v. 27A no. 11 Aug 1993. p. 1657-1663, 1993.

Sherrington, I., Smith, E.H, Design and performance assessment of a Kelvin clamp for use in relocation analysis of surface topography: Precision Engineering v. 15 no. 2 Apr 1993. p. 77-85, 1993.

Shetty, Devdas, Improving the quality of fiber-optic-based surface-roughness sensing instrument using robust design methodology: Proceedings of SPIE - The International Society for Optical Engineering v. 1821 1993. Bellingham, WA, p. 195-205, 1993.

Shibata, Akihide, Takayanagi, Kunio, Restructuring of the reconstructed Si(111)7 X 7 surface by metal(Au, Ag) deposition: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 32 no. 3B Mar 1993. p. 1385-1388, 1993.

Shimada, S., Ikawa, N., Tanaka, H., Ohmori, G., Uchikoshi, J., Yoshinaga, H., Feasibility study on ultimate accuracy in microcutting using molecular dynamics simulation: CIRP Annals v. 42 no. 1 1993. p. 91-94, 1993.

Shimasaki, Yiuchi, Kanehiro, Masaki, Baba, Shigeki, Maruyama, Shigeru, Hisak, Takashi, Combustion monitoring: Automotive Engineering (Warrendale, Pennsylvania) v. 101 no. 7 Jul 1993. p. 15-19, 1993.

Shimizu, Ichiro, Abe, Takeji, Surface roughening and fractal dimension during plastic deformation of polycrystalline iron: Nippon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan Society of Mechanical Engineers, Part A v. 59 no. 558 Feb 1993. p. 367-374.

Shipway, P.H., Hutchings, I.M., Influence of nozzle roughness on conditions in a gas-blast erosion rig: Wear v. 162-64 pt A Apr 13 1993. p. 148-158, 1993.

Shoshany, Maxim: Roughness-reflectance relationship of bare desert terrain, An empirical study: Remote Sensing of Environment v. 45 no. 1 Jul 1993. p. 15-27, 1993.

Shukla, Arun, Sadd, Martin H., Singh, Raman, Tai, Qiming, Vishwanathan, S., Role of particle shape and contact profile on the dynamic response of particulate materials: Optics and Lasers in Engineering v. 19 no. 1-3 1993. p. 99-119, 1993.

Sidhu, S. K., Henderson, L. J., Surface finish of light-cured composite resin materials: Clinical Materials v. 12 no. 1 1993 p. 11-15, 1993.

Sieczka, Eric J., Feasibility of moire contouring for flatness checking of steel plates: Proceedings of SPIE - The International Society for Optical Engineering v. 1821 1993, Bellingham, WA, p. 428-438, 1993.

Sigal, Asher, Aerodynamic effects of body roughness: Journal of Spacecraft and Rockets v. 30 no. 3 May-Jun 1993. p. 298-303, 1993.

Simons, Richard R., Grass, Tony J., Mansour-Tehrani, Mehrdad, Bottom shear stresses in the boundary layers under waves and currents crossing at right angles: Proceedings of the Coastal Engineering Conference v. 1 1993. ASCE, New York. p. 604-617, 1993.

Skidmore, J.A., Lishan, D.G., Young, D.B., Hu, E.L., Coldren, L.A, Effects of hydrogen on chlorine radical-beam ion-beam etching of Al//xGa//1// minus //xAs with varying mole fraction: Journal of the Electrochemical Society v. 140 no. 6 Jun 1993. p. 1802-1804, 1993.

Slotwinski, J.A., Hsu, N.N., Blessing, G.V., Ultrasonic measurement of surface and subsurface structure in ceramics: NIST Special Publication no. 847 Jun 1993. p. 117-123, 1993.

Smiley, R.J., Delgass, W.N., AFM, SEM and XPS characterization of PAN-based carbon fibres etched in oxygen plasmas: Journal of Materials Science v. 28 no. 13 Jul 1 1993. p. 3601-3611, 1993.

Sorensen, Bent Fruergaard, Effect of fibre roughness on the overall stress-transverse strain response of ceramic composites: Scripta Metallurgica et Materialia v. 28 no. 4 Feb 15 1993. p. 435-439, 1993.

Speaker, Lois M., Status of surface modification for minimizing dirt retention. Organized monomolecular assemblies: Critical Reviews in Surface Chemistry v. 2 no. 4 1993. p. 219-246, 1993.

Sproul, W.D., Rudnik, P.J., Legg, K.O., Munz, W.-D., Petrov, I., Greene, J.E, Reactive sputtering in the ABS**T**M system: Surface & Coatings Technology v. 56 no. 2 Jan 9 1993. p. 179-182, 1993.

Stachowiak, G. W., and A. W. Batchelor, Engineering Tribology: Elsevier, Amsterdam (1993).

Stanic, Steve, Kennedy, Edgar G, Reverberation fluctuations from a smooth seafloor: IEEE Journal of Oceanic Engineering v. 18 no. 2 Apr 1993. p. 95-99, 1993.

Steffen, H., Wulff, H., Lunk, A., In and ex situ diagnostics of the growth of alpha -Ti thin films deposited by plasma-enhanced physical vapour deposition: Thin Solid Films v. 228 no. 1-2 May 15 1993. p. 117-120, 1993.

Stickles, R.W., Dodds, W.J., Koblish, T.R., Sager, J., Clouser, S., Innovative high-temperature aircraft engine fuel nozzle design: Journal of Engineering for Gas Turbines and Power, Transactions of the ASME v. 115 no. 3 Jul 1993. p. 439-446, 1993.

Stout, K.J., Sullivan, P.J., Dong, W.P., Mainsah, Evaristus, Luo, N., Mathia, T.G, and Zahouani, H., The development of methods for the characterisation of roughness in three dimensions: Univ. Birmingham, UK, School of Manufacturing and Mechanical Engineering, contract report *for* Commission of the European Communities, Brussels, Publication No. EUR 1517 EN (ISBN 0-7044-1313-2), 358 p. , (1993). [EC Contract No.3374/1/0/170/90/2, Phase II Report, Vol.1 (March 1993)].

Strenkowski, J.S., Larson, W.C., Tool flank wear in single point diamond turning: NIST Special Publication no. 847 Jun 1993. p. 295-302, 1993.

Stuermer, Martin: Material removal processing with Nd,YAG lasers: Proceedings of SPIE - The International Society for Optical Engineering v. 1864 1993. Bellingham, WA, p. 108-117, 1993.

Su, Y.-T., Lin, M.-H., Lee, M.-S., Effects of surface irregularities on roller bearing vibrations: Journal of Sound and Vibration v. 165 no. 3 Aug 22 1993. p. 455-466, 1993.

Suganuma, Katsuaki, Reliability factors in ceramic/metal joining: Materials Research Society Symposium Proceedings v. 314 1993. Pittsburgh, PA, p. 51-60, 1993.

Sugimura, J., Watanabe, T. and Yamamoto, Y., Effects of surface roughness pattern on the running-in process of rolling/sliding contacts: Proc. 20th Leeds-Lyon Symp. on Tribology (September 1993).

Sultanov, K.S., Regularities of interaction of underground construction with the ground: Prikladnaya Mekhanika v. 29 no. 3 Mar 1993. p. 60-67, 1993.

Suzuki, Mineharu, Homma, Yoshikazu, Kudoh, Yukie, Abumoto, Norikuni, Roughness evaluation of thermally oxidized Si(111) surfaces by scanning force microscopy: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 32 no. 3B Mar 1993. p. 1419-1422, 1993.

Suzuki, Tateyuki, Adachi, Takashi, Kobayashi, Susumu, Experimental analysis of reflected shock behavior over a wedge with surface roughness (local behavior): JSME International Journal, Series B, Fluids and Thermal Engineering v. 36 no. 1 Feb 1993. p. 130-134, 1993.

Swamee, Prabhata K, Generalized inner region velocity distribution equation: Journal of Hydraulic Engineering v. 119 no. 5 May 1993. p. 651-656, 1993.

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Taguchi, Tsunemasa, Kawakami, Yoichi, Yamada, Yoichi, Interface properties and the effects of strain of ZnSe/ZnS strained-layer superlattices: Physica B, Condensed Matter v. 191 no. 1-2 Sep 1 1993. p. 23-44, 1993.

Takakura, Norio, Yamaguchi, Katsuhiko, Kitagawa, Masahiko, Suppression of free surface roughening of metal with plastic deformation: Nippon Kikai Gakkai

Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 59 no. 561 May 1993. p. 211-216.

Takeuchi, Yoshimi, Kato, Kazuya, Kawakita, Shinichiro, Sawada, Kiyoshi, Sata, Toshio, Generation of sculptured surfaces by means of an ultraprecision milling machine: CIRP Annals v. 42 no. 1 1993. p. 611-614, 1993.

Tanaka, Shinji, Hashimoto, Hisayoshi, Sato, Kazuo, Development of silicon acoustic lens: Joumal of the Japan Society of Precision Engineering/Seimitsu Kogaku Kaishi v. 59 no. 1 Jan 1993. p. 72-76, 1993.

Tarada, F., Suzuki, M., External heat transfer enhancement to turbine blading due to surface roughness: American Society of Mechanical Engineers (Paper) 1993. ASME, New York. 8p 93-GT-74, 1993.

Tay, C.J., Toh, S.L., Shang, H.M., Zhang, J.B., Whole field measurement of surface roughness using laser speckle: Journal of Materials Processing Technology v. 38 no. 1-2 Feb 1993. p. 195-202, 1993.

Teja, S. Ravi, Jayasingh, T., Characterisation of ground surface profiles - a comparison of AR, MA and ARMA modelling methods: International Journal of Machine Tools & Manufacture v. 33 no. 1 Feb 1993 p. 103-109, 1993.

Thompson, D.J., Wheel-rail noise generation, Part I, Introduction and interaction model: Journal of Sound and Vibration v. 161 no. 3 Mar 8 1993. p. 387-400, 1993.

Thompson, D.J., Wheel-rail noise generation, Part V, Inclusion of wheel rotation: Journal of Sound and Vibration v. 161 no. 3 Mar 8 1993. p. 467-482, 1993.

Tian, Hong, Matsudaira, Takeo, Role of relative humidity, surface roughness and liquid build-up on static friction behavior of the head/disk interface: Journal of Tribology, Transactions of the ASME v. 115 no. 1 Jan 1993 p. 28-35, 1993.

Ting, V.C., Effects of nonstandard operating conditions on the accuracy of orifice meters: SPE Production & Facilities v. 8 no. 1 Feb 1993. p. 58-62, 1993.

Toledo, Pedro G., Davis, H. Ted, Scriven, L.E., Capillary hyperdisperson of wetting liquids in fractal porous media: Transport in Porous Media v. 10 no. 1 Jan 1993. p. 81-94, 199.

Tomiya, S., Reaves, C.M., Krishnamurthy, M., Wassermeier, M., Bimberg, D., Petroff, P.M., DenBaars, S.P., Photoluminescence studies of a quantum well modulated by faceting on GaAs(110) surfaces: Common Themes and Mechanisms of Epitaxial Growth, Materials Research Society Symposium Proceedings v. 312 Apr 13-15 1993. Pittsburgh, PA, p. 279-284, 1993.

Tonder, K., Characteristic effects of DDC lubrication: Lubrication Science v. 5 no. 4 Jul 1993. p. 323-336, 1993.

Toyama, Isao, Inasaki, Ichiro, Shiratori, Hidehisa, High-efficiency grinding of cermet: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 59 no. 558 Feb 1993. p. 267-272, 1993.

Troiler-McKinstry, S., Hu, H., Krupanidhi, S.B., Chindaudom, P., Vedam, K., Newnham, R.E., Spectroscopic ellipsometry studies on ion beam sputter deposited Pb(Zr, Ti)O//3 films on sapphire and Pt-coated silicon substrates: Thin Solid Films v. 230 no. 1 Jul 15 1993. p. 15-27, 1993.

Trott, Keith D., Walker, John R. Jr., MMW modeling and measurement of targets and materials: Proceedings of SPIE - The International Society for Optical Engineering v. 1874 1993. Bellingham, WA p. 74-83, 1993.

Tsai, H.L., Tsai, P.C., Tu, David C., Characterization of laser glazed plasma sprayed yttria stabilized zirconia coatings: Materials Science & Engineering A, Structural Materials, Properties, Microstructure and Processing v. A161 no. 1 Mar 15 1993. p. 145-155, 1993.

Tsujino, Jiromaru, Ueoka, Tetsugi, Takiguchi, Kazuhiro, Satoh, Hajime, Takahashi, Kazumitsu, Characteristics of bending parts of metal plates using ultrasonic bending systems with a vibration punch and a vibration die: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 32 no. 5B May 1993. p. 2447-2451, 1993.

Tsukada, K., Kawai, J., Uehara, G., Kado, H, Relationship of Nb surface morphology and Al coverage to the intrinsic stress of magnetron-sputtered Nb films: IEEE Transactions on Applied Superconductivity v. 3 no. 1 pt 4 Mar 1993. p. 2944-2946, 1993.

Tsukamoto, Naohisa, Maruyama, Hiroki, Mimura, Hiroshi, Ebata, Yooichi, Basic characteristics of plastic gears lubricated with water: JSME International Journal, Series C, Dynamics, Control, Robotics, Design and Menufacturing v. 36 no. 2 Jun 1993. p. 241-250, 1993.

Tsukruk, V.V., Reneker, D.H., Bengs, H., Ringsdorf, H., Atomic force microscopy of ordered monolayer films from discotic liquid crystals: Langmuir v. 9 no. 8 Aug 1993. p. 2141-2144, 1993.

Tsutsumi, Chisato, Okano, Keisaku, Suto, Tetsuya, High quality machining of ceramics: Journal of Materials Processing Technology v. 37 no. 1-4 Feb 1993. p. 639-654, 1993.

Uematsu, T., Suzuki, K., Wu, M.H., Imanaka, O., Efficient mechanochemical polishing for silicon nitride ceramics: NIST Special Publication no. 847 Jun 1993. p. 409-413, 1993.

Uwaha, Makio, Saito, Yukio, Fluctuation of steps in a surface diffusion field: Journal of Crystal Growth v. 128 no. 1-4 pt 1 Mar 1 1993. p. 87-91, 1993.

Uwaha, Makio, Saito, Yukio, Roughening and smoothing of steps with surface diffusion: Surface Science v. 283 no. 1-3 Mar 1 1993. p. 366-370, 1993.

Vaidyanathan, Tritala K., Vaidyanathan, Jayalakshmi, Waknine, Samue, Characterization and optimization of small particle dental composites: IASTM Special Technical Publication no. 1178 1993. ASTM, Philadelphia, PA, p. 121-144, 1993.

Vaksman, Michael A., Ben-Reuven, Abraham, Surface light-induced drift as a tool for studying gas-surface interactions: Surface Science v. 287-88 pt A May 10 1993. p. 196-200, 1993.

van den Molengraaf, Jeroen C. M., van mal, Herman H., Wijnia, Jacques, Selection procedures for manufacturing processes for design engineers: Robotics and Computer-Integrated Manufacturing v. 10 no. 1-2 1993. p. 57-64, 1993.

Venkatesh, V.C., Zhou, D.Q., Xue, W., Quinto, D.T., Study of chip surface characteristics during the machining of steel: CIRP Annals v. 42 no. 1 1993. p. 631-636, 1993.

Veprek, S., Wang, Ch., Ratz, G., Control of isotropic and anisotropic etching and surface cleaning of silicon and silicon dioxide in a hydrogen plasma: Chemical Perspectives of Microelectronic Materials III, Materials Research Society Symposium Proceedings v. 282 1993, p. 511-516, 1993.

Voutsas, Apostolos T., Hatalis, Miltiadis K., Surface treatment effect on the grain size and surface roughness of as-deposited LPCVD polysilicon films: Journal of the Electrochemical Society v. 140 no. 1 Jan 1993 p. 282-288, 1993.

Wakuda, Manabu, Inasaki, Ichiro, Ogawa, Koji, Takahara, Motoaki, Monitoring of the grinding process with an AE sensor integrated CBN wheel: Journal of the Japan Society of Precision Engineering/Seimitsu Kogaku Kaishi v. 59 no. 2 Feb 1993. p. 275-280.

Wang, Bingkui, Shi, Jinming, Li, Guomei, Shen, Yongjia, Study of organic film on metal surface using optical method: Jiguang Zazhi/Laser Journal v. 14 no. 2 Apr 1993. p. 75-79, 1993.

Wang, F., Woerdenweber, R., Large-area epitaxial CeO//2 buffer layers on sapphire substrates for the growth of high quality YBa//2Cu//3O//7 films: Thin Solid Films v. 227 no. 2 May 10 1993. p. 200-204, 1993.

Wang, Jinjun, Dong, Zengnan, Chen, Changzhi, Xia, Zhenhuan, Effects of bed roughness on the distribution of turbulent intensities in open-channel flow: Journal of Hydraulic Research v. 31 no. 1 1993. p. 89-98, 1993.

Wang, S.Z., Rajurkar, K.P., Kozak, J, Effect of grain size on wire electrical discharge machining of polycrystalline diamond: NIST Special Publication no. 847 Jun 1993. p. 535-542, 1993.

Wang, T.L., Shahawy, M., Huang, D.Z., Probabilistic fatigue life analysis of highway steel bridges: Computers and Structures v. 48 no. 2 Jul 17 1993. p. 241-248, 1993.

Wang, Ton-Lo, Huang, Dongzhou, Shahawy, Mohsen, Vibration and impact in skewed steel bridges: Structural Engineering in Natural Hazards Mitigation Proc Symp Struct Eng Nat Hazard Mitigation 1993. ASCE, New York. p. 1533-1538, 1993.

Watanabe, Masaaki, Analysis of the rapid extension of the crack: Nippon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan

Society of Mechanical Engineers, Part A v. 59 no. 559 Mar 1993. p. 747-751, 1993.

Weber, A., Bringmann, U., Schiffmann, K., Klages, C.-P., Influence of a rf plasma on the nucleation of aluminum using N-trimethylamine-alane(TMAA) as precursor: Chemical Perspectives of Microelectronic Materials III, Materials Research Society Symposium Proceedings v. 282 1993, p. 311-316, 1993.

Wern, C.W., Ramulu, M., Colligan, K., Study of the surface texture of composite drilled holes: Journal of Materials Processing Technology v. 37 no. 1-4 Feb 1993. p. 373-389, 1993.

Werner, P., Zakharov, N.D., Chen, Y., Liliental-Weber, Z., Washburn, J., Klem, J.F., Tsao, J.Y., Investigation of misfit dislocation configurations in MBE-grown InGaAs layers on misaligned GaAs(001) substrates: Materials Research Society Symposium Proceedings v. 283 1993. Pittsburgh, PA, p. 811-814, 1993.

Whaley, D.R., TRan, M.Q., Equilibrium and space-charge wave analysis of electron beams in conducting and absorbing gyrotron beam tunnels: International Journal of Electronics v. 74 no. 5 May 1993. p. 793-805, 1993.

Whall, T.E., Smith, D.W., Plews, A.D., Kubiak, R.A., Phillips, P.J., Parker, E.H.C, High hole mobilities in a p. -type modulation-doped Si/Si//0//.//8//7Ge//0//.//1//3Si heterostructure: Semiconductor Science and Technology v. 8 no. 4 Apr 1993. p. 615-616, 1993.

White, J.W., Effect of two-dimensional surface roughness on the load-carrying capacity of a thin compressible gas film: Journal of Tribology, Transactions of the ASME v. 115 no. 2 Apr 1993. p. 246-252, 1993.

Wielinga, T., Melissant, J, New optical devices for surface roughness measurements: Journal of Magnetism and Magnetic Materials v. 120 no. 1-3 Mar 1 1993. p. 116-118, 1993.

Wignarajah, Sivakumaran, Sugimoto, Kenji, Nagai, Kaori, Effect of laser surface treatment on the physical characteristics and mechanical behaviour of cement base materials: LIA (Laser Institute of America) v. 75 1993. Laser Inst of America, Orlando, FL, p. 383-392, 1993.

Williams, A.F., Burcharth, H.F., den Adel, H., Permeability of rubble mound breakwaters. New measurements and new ideas: Proceedings of the Coastal Engineering Conference v. 2 1993. ASCE, New York. p. 1720-1733, 1993.

Winzeler, Heinz B., Belfort, Georges: Enhanced performance for pressure-driven membrane processes, the argument for fluid instabilities: Journal of Membrane Science v. 80 Jun 2 1993. p. 35-47, 1993.

Wolf, D., and Husson, R., Application des ondelettes à l'analyse de texture et à l'inspection de surface industrielle (in French): Jour. Phys. III France, v. 3, p. 2133-2148, 1993.

Wong, M., Bowling, R. A., Silicon etch using vapor phase HF/H//2O and O//3: Journal of the Electrochemical Society v. 140 no. 2 Feb 1993 p. 567-570, 1993.

Wu, Chong-ruo, Investigation on p. -no. junction etch stop: Sensors and Actuators, A, Physical v. 35 no. 3 Feb 1993. p. 181-187, 1993.

Wu, Chung-Wen, Corrosion-wear study of 304 stainless steel in various NaCl solutions: Wear v. 162-64 pt B Apr 13 1993. p. 950-953, 1993.

Wu, Shyi-Kaan, Lin, Ray Y., Coating of SiC on titanium aluminide: Materials Research Society Symposium Proceedings v. 288 1993. Pittsburgh, PA, p. 1031-1036, 1993.

Wu, Tung-Chuan, Morita, Noboru, Yoshida, Yoshitaro, Study on the diamond cutting of silicon single crystal (1st report, The effect of brittle-ductile transition on surface integrity): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 59 no. 557 Jan 1993. p. 283-288.

Wu, Y.L., Dacre, B. and Babus'Haq, R.F., Measurements of real surface area by the conical method and fractal approach: Wear, 160 p. 265-268 (1993).

Xian, Xu, Floryan, J.M., Ecoulement d'elements rugueux bi-dimensionnels (flow around two-dimensional roughness elements): Transactions of the Canadian Society for Mechanical Engineering v. 17 no. 1 1993. p. 67-81, 1993.

Xu, X.Z., Viret, M., Tebbji, H., Lagues, M., Layer by layer growth of epitaxial films of Bi//2Sr//2CuO//6, structural and electrical properties related to the oxidation level: Applied Superconductivity v. 1 no. 3-6 pt 1 Mar-Jun 1993. p. 755-759, 1993.

Xu, Xiaoli, Misra, Veena, Harris, Gari S., Spanos, Lycourgos, Ozturk, Mehmet C., Wortman, Jimmie J., Maher, Dennis M., Irene, Eugene A, Characterization of oxygen-doped and non-oxygen-doped polysilicon films prepared by rapid thermal chemical vapor deposition: Fuel Processing Technology v. 34 no. 3 Aug 1993. p. 49-54, 1993.

Yakimova, R., Paskova, T., Ivanov, I., Layer quality of Sb-doped GaAs grown by metalorganic vapor phase epitaxy: Journal of Crystal Growth v. 129 no. 1-2 Mar 2 1993. p. 143-148, 1993.

Yakobson, B.I., Shchukin, E.D., Environmentally enhanced instability of stressed solids: Journal of Materials Science v. 28 no. 17 Sep 1 1993. p. 4816-4820, 1993.

Yakovlev, S.P., Nechepurenko, Yu.G., Malenichev, E.S., Maslov, F.S., Mironov, M.M., New technology of waveguide SVCh-range section production: Kuznechno-Shtampovochnoe Proizvodstvo no. 5-6 May-Jun 1993. p. 19-20, 1993.

Yamada, Shigeru, Mizutani, Hideyuki, Notoya, Hisakimi, Takayanagi, Akira, Effects of built-up edge on cutting process of various aluminum alloys: Keikinzoku/Journal of Japan Institute of Light Metals v. 43 no. 4 Apr 1993. p. 206-212, 1993.

Yan, Biing Hwa, Liu, Hong Song, Small electrical discharge machining of Ti-6Al-4V alloy with rotating electrode: Keikinzoku/Journal of Japan Institute of Light Metals v. 43 no. 4 Apr 1993. p. 225-229, 199.

Yan, Biing-Hwa, Lee, Shen-Long, Chang, Shi-Shung, Machinability of hypereutectic Al-Si alloy fabricated by rapid solidification process: Keikinzoku/Journal of Japan Institute of Light Metals v. 43 no. 2 Feb 1993. p. 102-106, 1993.

Yan, Biing-Hwa, Wang, Chra-Chung, Machinability of SiC particle reinforced aluminum alloy composite material: Keikinzoku/Journal of Japan Institute of Light Metals v. 43 no. 4 Apr 1993. p. 187-192, 1993.

Yang, Been-Der, Menq, Chia-Hsiang, Compensation for form error of end-milled sculptured surfaces using discrete measurement data: International Journal of Machine Tools & Manufacture v. 33 no. 5 Oct 1993. p. 725-740, 1993.

Yang, Jiuun-Jer, Chung, Steve Shao-Shiun, Chang, Chien-Hwa, Lee, Giahn-Horng, Unified 3-D mobility model for the simulation of submicron MOS devices: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 32 no. 4 Apr 1993. p. 1583-1589, 1993.

Yang, M., Thompson, M., Surface morphology and the response of the thickness-shear mode acoustic wave sensor in liquids: Langmuir v. 9 no. 8 Aug 1993. p. 1990-1994, 1993.

Yang, Min, Talke, Frank E., Surface roughness investigations of thin film disks used in magnetic recording technology: Proceedings of SPIE - The International Society for Optical Engineering v. 1816, Bellingham, WA, p. 22-30, 1993.

Yoon, S.F., Aluminium content and its effect on MBE-grown Al//xGa//1// minus //xAs surfaces: Journal of Electrical and Electronics Engineering, Australia v. 13 no. 1 Mar 1993. p. 10-16, 1993.

Yoon, Soon Fatt, Surface roughness of strained In//0//.//1 Ga//0//.//9 as films grown on GaAs substrates by molecular beam epitaxy: Thin Solid Films v. 223 no. 2 Feb 15 1993. p. 320-326, 1993.

Yoshitomi, Kuniaki, Ishimaru, Akira, Hwang, Jeng-Neng, Chen, Jei Shuan, Surface roughness determination using spectral correlations of scattered intensities and an artificial neural network technique: IEEE Transactions on Antennas and Propagation v. 41 no. 4 Apr 1993. p. 498-502, 1993.

You, Z.J., Nielsen, P., Current velocity profiles in the presence of waves: National Conference Publication - Institution of Engineers, Australia v. 1 no. 93 pt 4 1993. IE Aust, Crows Nest, NSW, Aust. p. 253-257, 1993.

Zaitsev, A.L., Mechanisms of hard alloy wear in frictional processes with polymers and composite materials: Wear v. 162-64 pt A Apr 13 1993. p. 40-46, 1993.

Zhang, Jishuang, Li, Qinlian, Lu, Yaojiao, Yan, Xiyun, Studies of ion-beam modified hydrogen evolution electrodes: Hunan Daxue Xuebao/Journal of Hunan University Natural Sciences v. 20 no. 3 Jun 1993. p. 20-26, 1993.

Zheng, Hairong, Chen, Yuan, Zhu, Ke, Zhang, Jiansheng, Mo, Yujun, Manufacture of Au substrate and study of SERS on Co(II) TsPc/Au system: Zhongguo Jiguang/Chinese Journal of Lasers v. 20 no. 4 Apr 20 1993. p. 315-317, 1993.

Zhong, Chen Huan, Xian, Pen Zhong, Zhong, Lei Jian, Huei, Tian Huei, Kun, Song Xi, Wen, Fan You, CVD multiple-layer coatings on 9Cr18 steel and its application for high-precision ball bearings: ASTM Special Technical Publication no. 1195 1993. ASTM, Philadelphia, PA, p. 71-80, 1993.

Zhou, Jinhong, Chang, Howard H., Stow, Douglas, Model for phase lag of secondary flow in river meanders: Journal of Hydrology v. 146 no. 1-4 Jun 1 1993. p. 73-88, 1993.

Zhu, C.B., Midha, P.S., Trmal, G.J., Dynamic modelling approach to computer aided optimum selection of grinding parameters: Journal of Materials Processing Technology v. 38 no. 1-2 Feb 1993. p. 227-246, 1993.

Zhu, Dong, Hu, Yuan-Zhong, Cheng, Herbert S., Arai, Takayuki, Hamai, Kyugo, Numerical analysis for piston skirts in mixed lubrication. Part II. Deformation considerations: Journal of Tribology, Transactions of the ASME v. 115 no. 1 Jan 1993 p. 125-133, 1993.

Zhuk, N.P., Frankov, A.V., Yarovoj, A.G., Electromagnetic wave backscattering from rough surface of the medium with exponential permittivity profile: Radiotekhnika i Elektronika v. 38 no. 6 Jun 1993. p. 994-998, 1993.

Zimmermann, Lorenz, Weibel, Martin, Caseri, Walter, Suter, Ulrich W., High refractive index films of polymer nanocomposites: Journal of Materials Research v. 8 no. 7 Jul 1993. p. 1742-1748, 1993.

## 1994 A-F

Abrahams, Athol D., Parsons, Anthony J., Wainwright, John, Resistance to overland flow on semiarid grassland and shrubland hillslopes, Walnut Gulch, southern Arizona: Journal of Hydrology v. 156 no. 1-4 Apr 1994. p. 431-446 1994.

Abugov, A.L., Barshay, I.L., Belotserkovskij, M.A., Tulemat, M., Wear resistance improved by surface plastic deformation of parts made from antifriction powder materials: Trenie i Iznos v. 15 no. 2 Mar-Apr 1994. p. 264-269 1994.

Ajayi, Joseph O., Elder, H.M., Objective evaluation of surface characteristics to determine smoothness of pile fabrics: Journal of Testing & Evaluation v. 22 no. 4 Jul 1994. p. 388-396 1994.

Al-Azba, A., Strelkoff, T., Correct form of hall technique for border irrigation advance: Journal of Irrigation and Drainage Engineering v. 120 no. 2 Mar-Apr 1994. p. 292-307 1994.

Aleksandrov, V.V., Saphonov, M.V., Velasco, V.R., Yakovlev, N.L., Martynenko, L. Ph., Pseudo-surface acoustic wave studies on MF//2/GaAs(111) heterostructures using Brillouin scattering: Journal of Physics Condensed Matter v. 6 no. 18 May 2 1994. p. 3347-3358 1994.

Aliaga, D.A., Lamb, J.P., Klein, D.E., Convection heat transfer distributions over plates with square ribs from infrared thermography measurements: International Journal of Heat and Mass Transfer v. 37 no. 3 Feb 1994. p. 363-374 1994.

Al-Mansour, Abdullah I., Sinha, Kumares C., Kuczek, Thomas, Effects of routine maintenance on flexible pavement condition: Journal of Transportation Engineering v. 120 no. 1 Jan-Feb 1994. p. 65-73 1994.

Amfilokhiev, V.B., Baksheeva, V.P., Mazaeva, N.P., Tetyanko, V.A., On calculation technique of the laminar-turbulent flow transition location at bodies of revolution: Akusticheskii Zurnal no. 3 May-Jun 1994. p. 510-511 1994.

Amfilokhiev, V.B., Mazaeva, N.P., Khodorkovskij, Ya.S., A semi-empirical scheme of pressure pulsation calculations under the turbulent boundary layer: Akusticheskii Zurnal no. 3 May-Jun 1994. p. 511-512 1994.

Anderson, Charles F., Raw water cement-mortar lined pipeline corrosion a case study: Proceedings of the International Conference on Hydraulics of Pipelines 1994. ASCE, p. 372-386 1994.

Andersson, Soren, Salas-Russo, Edwin, Influence of surface roughness and oil viscosity on the transition in mixed lubricated sliding steel contacts: Wear v. 174 no. 1-2 May 1994. p. 71-79 1994.

Andreopoulos, A.G., Polyzois, G.L., Frictional properties of maxillofacial prosthetic elastomers: Journal of Materials Science, Materials in Medicine v. 5 no. 1 Jan 1994. p. 25-28 1994.

Andrianov, A.B., Zuev, A.V., Levitan, L.L., Malyshenko, S.P., Orlova, I.A., Hydraulic resistance of a two-phase flow in a tube with a porous coating: Teplofizika Vysokikh Temperatur v. 32 no. 1 Jan-Feb 1994. p. 94-100 1994.

Arai, Takayuki, Aoyama, Shunichi, Kobayashi, Yoichi, Hu, Yuanzhong, Cheng, Herbert S., Analyses of piston skirts in mixed lubrication taking into account surface characteristics and elastic deformation: Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B v. 60 no. 571 Mar 1994. p. 1061-1067 1994.

Ariva, A.J., Salvarezza, R.C., Basic aspects regarding irregular metal surfaces and their applications in electrochemistry: Journal De Physique v. 4 no. 1 Jan 1994. p. 39-53 1994.

Arnold, J.C., Use of flexural tests in the study of environmental stress cracking of polymers: Polymer Engineering and Science v. 34 no. 8 Apr 1994. p. 665-670 1994.

Ayala, Luis, Lopez, Alejandro, Flow-bed interaction and energy loss in torrents: Proceedings - National Conference on Hydraulic Engineering pt 1 1994. ASCE, New York. p. 687-691 1994.

Aziz, S.M.A., Seireg, A., Parametric study of frictional noise in gears: Wear v. 176 no. 1 Jul 1994. p. 25-28 1994.

Bachmann, P.K., Lade, H., Leers, D., Wiechert, D.U., Theunissen, G.S.A.M., Wear testing of CVD diamond films: Diamond and Related Materials v. 3 no. 4-6 Apr 1994. p. 799-804 1994.

Bahar, E., Haugland, M., Unified full wave solutions to interpret Apollo lunar surface data: IEEE Transactions on Geoscience and Remote Sensing v. 32 no. 1 Jan 1994. p. 72-77 1994.

Bahar, E., Kubik, R.D., Li, Yan-Feng, Application of tilt modulation of the scatter cross-sections to distinguish between different non-Gaussian rough surfaces, Unified full wave approach: International Journal of Remote Sensing v. 15 no. 6 Apr 1994. p. 1317-1334 1994.

Balcerzak, T., Wojtczak, L., Influence of anharmonic interactions and external force on the surface roughness: Surface Science v. 301 no. 1-3 Jan 10 1994. p. 405-414 1994.

Benhenda, S., Jemaa, N. Ben, Bourir, M., Effect of pulse plating parameters on electrical contact behavior of nickel coatings: IEEE Transactions on Components, Packaging, and Manufacturing Technology Part A v. 17 no. 2 Jun 1994. p. 303-308 1994.

Beretta, Stefano, Boniardi, Marco, Matteazzi, Silvio, Fatigue behaviour of rope eutectoid steel wires: Zeitschrift für Metallkunde v. 85 no. 4 Apr 1994. p. 282-287 1994.

Berg, Dale E., Review of the workshop on WECS blade-surface roughness: Wind Energy American Society of Mechanical Engineers, Solar Energy Division, SED v. 15 1994. ASME, New York. p. 5 1994.

Bergeron, Normand E., Analysis of flow velocity profiles, stream bed roughness, and resistance to flow in natural gravel bed streams: Proceedings - National Conference on Hydraulic Engineering pt 1 1994. ASCE, New York. p. 692-696 1994.

Bergmann, R., Menschig, A., Lichtenstein, N., Hommel, J., Haerle, V., Scholz, F., Schweizer, H., Gruetzmacher, D., Investigation of boundary scattering in dry etched quantum wires by artificial manipulation of the wire boundaries: Microelectronic Engineering v. 23 no. 1-4 Jan 1994. p. 429-432 1994.

Bernatskij, F.I., Digo, G.B., Application of acceptable quality areas in controlling technological foundry processes: Liteinoe Proizvodstvo no. 3 Mar 1994. p. 24-25 1994.

Berner, Klaus, Effects of advanced quality assurance on measuring and testing techniques: Metallurgical Plant and Technology International v. 17 no. 3 Jun 1994. p. 170-179 1994.

Bertz, Andreas, Werner, Thomas, Formation of very flat silicon sidewalls by dry etching: Journal of Micromechanics and Microengineering v. 4 no. 1 Mar 1994. p. 23-27 1994.

Bhambri, Sushil K., Gilbertson, Leslie N., Characterization and quantification of fretting particulates generated in ceramic/metal and metal/metal modular head/taper systems: ASTM Special Technical Publication no. 1173 1994. ASTM, Philadelphia, PA, p. 111-126 1994.

Bhargava, Rakesh K., Free stream turbulence effects on a zero pressure gradient turbulent boundary layer development in the presence of distributed initial roughness: Boundary Layer and Free Shear Flows American Society of Mechanical Engineers, Fluids Engineering Division, FED v. 184 1994. ASME, New York. p. 37-54 1994.

Bhushan, Bharat, Ruan, Ju-Ai, Atomic-scale friction measurements using friction force microscopy, part II - application to magnetic media: Journal of Tribology, Transactions of the ASME v. 116 no. 2 Apr 1994. p. 389-396 1994.

Biner, S.B., Buck, O., Spitzig, W.A., Plasticity induced fatigue crack closure in single and dual phase materials: Engineering Fracture Mechanics v. 47 no. 1 Jan 1994. p. 1-12 1994.

Blair, M.F., Experimental study of heat transfer in a large-scale turbine rotor passage: Journal of Turbomachinery, Transactions of the ASME v. 116 no. 1 Jan 1994. p. 1-13 1994.

Bonifacio, M.E.R., Diniz, A.E., Correlating tool wear, tool life, surface roughness and tool vibration in finish turning with coated carbide tools: Wear v. 173 no. 1-2 Apr 1994. p. 137-144 1994.

Borst, T.H., Münzinger, P.C., and Weis, O., Characterization of undoped and doped homoepitaxial diamond layers produced by microwave plasma CVD: Diamond and Related Materials, v. 3, nos. 4-6, p. 515-519, (1994).

Bowen, D.K., Wormington, M., Measurement of surface roughnesses and topography at nanometer levels by diffuse X-ray scattering: CIRP Annals v. 43 no. 1 1994. p. 497-500 1994.

Boyer, L., Houze, F., Tonck, A., Loubet, J.-L., Georges, J.-M., Influence of surface roughness on the capacitance between a sphere and a plane: Journal of Physics D, Applied Physics v. 27 no. 7 Jul 14 1994. p. 1504-1508 1994.

Bozma, Omur, Kuc, Roman, Physical model-based analysis of heterogeneous environments using sonar-ENDURA method: IEEE Transactions on Pattern Analysis and Machine Intelligence v. 16 no. 5 May 1994. p. 497-506 1994.

Bradlley, R.J., Ling, X., Sutherland, I., Davies, L., Surface chemistry of PAN carbon fibers in relation to ILSS in epoxy-resin composites: Journal of Materials Science Letters v. 13 no. 2 Jan 15 1994. p. 105-106 1994.

Brataas, Arne, Bauer, Gerrit E.W., Perpendicular transport through rough interfaces in the metallic regime: Solid-State Electronics v. 37 no. 4-6 Apr-Jun 1994. p. 1239-1242 1994.

Brighton, P.W.M., Byrne, A.J., Cleaver, R.P., Courtiade, P., Crabol, B., Fitzpatrick, R.D., Firard, A., Jones, S.J., Lhomme, V., Mercer, A., Neddlka, D., Proux, C., Webber, D.M., Comparison of heavy gas dispersion models for instantaneous releases: Journal of Hazardous Materials v. 36 no. 3 Mar 1994. p. 193-208 1994.

Bruce, N.C., Ruiz-Cortes, V., Dainty, J.C., Calculations of grazing incidence scattering from random rough surfaces using the Kirchhoff approximation: Optics Communications v. 106 no. 4-6 Mar 15 1994. p. 123-126 1994.

Bryant, Michael D., Resistance buildup in electrical connectors due to fretting corrosion of rough surfaces: IEEE Transactions on Components, Packaging, and Manufacturing Technology Part A v. 17 no. 1 Mar 1994. p. 86-95 1994.

Buchholtz, L.J., **3He-B in a thin film, a comparison of boundary conditions: Physica B, Condensed Matter v. 194-96 pt 1 Feb 2 1994. p. 783-784 1994.

Bukreeva, I.N., Kozhevnikov, I.V., Whispering gallery effect for the testing of concave surface microroughness: Physica B, Condensed Matter v. 198 no. 1-3 Apr 1 1994. p. 13-15 1994.

Burton, Ralph, Effects of wall perturbations on thermo-turbulent Couette flow: S T L E Tribology Transactions v. 37 no. 2 Apr 1994. p. 415-419 1994.

Cann, P., Ioannides, E., Jacobson, E., Lubrecht, A.A., Lambda ratio - a critical re-examination: Wear v. 175 no. 1-2 Jun 1994. p. 177-188 1994.

Carabin, P., Kerr, R.B., Visual ranking of newsprint color by the rangefinder method: Journal of Pulp and Paper Science v. 20 no. 2 Feb 1994. p. 66-69 1994.

Carper, H.J., Ertas, A., Cuvalci, O., Effect of contact geometry and other tribological variables on the friction coefficient in threaded connections: Tribology Symposium American Society of Mechanical Engineers, Petroleum Division, PD v. 61 1994. ASME, New York. p. 117-122 1994.

Carruthers, D.J., Holroyd, R.J., Hunt, J.C.R., Weng, W.S., Robins, A.G., Apsley, D.D., Thomson, D.J., Smith, F.B., UK-ADMS, A new approach to modelling dispersion in the earth's atmospheric boundary layer: Journal of Wind Engineering and Industrial Aerodynamics v. 52 no. 1-3 May 1994. p. 139-153 1994.

Carter, G., Peening in ion-assisted thin-film deposition, A generalized model: Journal of Physics D, Applied Physics v. 27 no. 5 May 14 1994. p. 1046-1055 1994.

Castro, Ian P., Wiggs, Giles F.S., Pulsed-wire anemometry on rough surfaces, with application to desert sand dunes: Journal of Wind Engineering and Industrial Aerodynamics v. 52 no. 1-3 May 1994. p. 53-71 1994.

Chang, Chi Shih, Agrawal, Amit P., Fine line thin dielectric circuit board characterization: Proceedings - Electronic Components and Technology Conference 1994, IEEE, Piscataway, NJ. p. 564-569 1994.

Chang, L., Jackson, A., Webster, M.N., Effects of 3-D surface topography on the EHL film thickness and film breakdown: S T L E Tribology Transactions v. 37 no. 3 Jul 1994. p. 435-444 1994.

Chang, Wen-Ruey, Ling, Frederick F., Theory of life prediction of a viscoelastic lubricating surface film: S T L E Tribology Transactions v. 37 no. 2 Apr 1994. p. 396-402 1994.

Chanson, Hubert, Air-water interface area in self-aerated flows: Water Research v. 28 no. 4 Apr 1994. p. 923-929 1994.

Chanson, Hubert, Hydraulics of skimming flows over stepped channels and spillways: Journal of Hydraulic Research v. 32 no. 3 1994. p. 445-460 1994.

Chason, E., Mayer, T.M., Howard, A.J., Kinetics of surface roughening and smoothing during ion sputtering: Mechanisms of Thin Film Evolution, Materials Research Society Symposium Proceedings v. 317 1994. p. 91-102 1994.

Cheng, S.X., Jing, S.X., Ge, X.S., Yao, C.C., Method and apparatus for determination of the total directional emissivity of opaque materials in the temperature range 300 to 600 K: International Journal of Thermophysics v. 15 no. 1 Jan 1994. p. 177-187 1994.

Cheng, W., Cheng, H.S., Keer, L.M., Experimental investigation on rolling/sliding contact fatigue crack initiation with artificial defects: S T L E Tribology Transactions v. 37 no. 1 Jan 1994. p. 1-12 1994.

Chi, Chung-Ming, Vits, Hugo, Staba, E. John, Cooke, Todd J., Hu, Wei-Shou, Morphological kinetics and distribution in somatic embryo cultures: Biotechnology and Bioengineering v. 44 no. 3 Jul 1994. p. 368-378 1994.

Chiang, Edward H., Adler, Ronald S., Meyer, Charles R., Rubin, Jonathan M., Debrick, Dale K., Laing, Timothy J., Quantitative assessment of surface roughness using backscattered ultrasound, the effects of finite surface curvature, Ultrasound in Medicine and Biology v. 20 no. 2 1994. p. 123-135 1994.

Chizhik, S.A., Capillary mechanism of friction and adhesion for rough surfaces: Trenie i Iznos v. 15 no. 1 Jan-Feb 1994. p. 11-26 1994.

Cho, Nahmgyoo, Tsukada, Tadao, Takahashi, Masaaki, Correction of specimen orientation in three-dimensional measurement of surface roughness with small waviness by contact stylus instrument (1st report) - theoretical foundation: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 60 no. 4 Apr 1994. p. 549-553 1994.

Choudhart, Meelan, Hall, Philip, Streett, Craig: On spatial evolution of long-wavelength Gortler vortices governed by a viscous-inviscid interaction part 1, the linear case, Quarterly Journal of Mechanics and Applied Mathematics v. 47 pt 2 May 1994. p. 207-229 1994.

Clark, Donald, Analyzing field data for Hazen-Williams and Darcy-Weisbach equations: Proceedings of the International Conference on Hydraulics of Pipelines 1994. ASCE, New York. p. 1-9 1994.

Coon, William F., Roughness coefficients for high-gradient channels in New York State: Proceedings - National Conference on Hydraulic Engineering pt 1 1994. ASCE, New York. p. 722-726 1994.

Coon, William F., Design of Manning's-roughness-coefficient study in New York State: Proceedings - National Conference on Hydraulic Engineering pt 1 1994. ASCE, New York. p. 677-681 1994.

Das, D.K., Surface roughness created by laser surface alloying of aluminum with nickel: Surface & Coatings Technology,v. 64 no. 1, Apr 1994. p. 11-15 1994.

Das, Sanjit K., Schechter, Robert S., Sharma, Mukul M., Role of surface roughness and contact deformation on the hydrodynamic detachment of particles from surfaces: Journal of Colloid and Interface Science v. 164 no. 1 Apr 1994. p. 63-77 1994.

Dauksher, W.J., Resnick, D.J., Johnson, W.A., Yanof, A.W., New operating regime for electroplating the gold absorber on X-ray masks: Microelectronic Engineering v. 23 no. 1-4 Jan 1994. p. 235-238 1994.

Davies, T., Kun, Xu, Luxmoore, A.R., Digital measurement of surface profiles by automated optical sectioning: Measurement Science & Technology v. 5 no. 6 Jun 1994. p. 710-715 1994.

Dawson, B.R.P., Parsons, A.J., Texture measures for the identification and monitoring of urban derelict land: International Journal of Remote Sensing v. 15 no. 6 Apr 1994. p. 1259-1271 1994.

De Baets, P., Wear simulation of a sliding system by means of large-scale specimen testing: Wear v. 173 no. 1-2 Apr 1994. p. 65-74 1994.

de Beer, Dirk, Stoodley, Paul, Lewandowski, Zbigniew, Liquid flow in heterogeneous biofilms: Biotechnology and Bioengineering v. 44 no. 5 Aug 20 1994. p. 636-641 1994.

De Chiffre, L., Christiansen, S., Skade, S., Advantages and industrial applications of three-dimensional surface roughness analysis: CIRP Annals v. 43 no. 1 1994. p. 473-478 1994.

De Chiffre, L., Lassen, S., Pedersen, K.B., Skade, S., Reaming test for cutting fluid evaluation: Journal of Synthetic Lubrication v. 11 no. 1 Apr 1994. p. 17-34 1994.

de Damborenea, J., Vazquez, A.J., Fernandez, B., Laser-clad 316 stainless steel with Ni-Cr powder mixtures: Materials & Design v. 15 no. 1 1994. p. 41-44 1994.

Dejun, Li, Jie, Zhao, Structure and biomedical behavior of ion bombarded and plasma polymerized segmented polyurethane: Applied Surface Science v. 78 no. 2 Jun 1994. p. 195-201 1994.

Demkin, N.B., A model of friction for elastic plastic contact: Trenie i Iznos v. 15 no. 1 Jan-Feb 1994. p. 5-10 1994.

Deng, Gang, Maruyama, Noboru, Morikawa, Kunihiko, Hitomi, Nobuteru, Kato, Masana, Measurement of surface temperature of spur gear teeth by thermocouples: Nippon Kikai Gakkai Ronbunshu, C Hen/ Transactions of the Japan Society of Mechanical Engineers, Part C v. 60 no. 570 Feb 1994. p. 675-679 1994.

DeOtte, Robert E. Jr., Morrison, Gerald L., Nava, Deborah L., Hess, John C., Study of friction in channel flow between plates with highly roughened surfaces: Fluid Machinery American Society of Mechanical Engineers, Fluids Engineering Division, FED v. 195 1994. ASME, New York. p. 23-27 1994.

Derbyshire, B., Fisher, J., Dowson, D., Hardaker, C., Brummitt, K., Comparative study of the wear of UHMWPE with zirconia ceramic and stainless steel femoral heads in artificial hip joints: Medical Engineering & Physics v. 16 no. 3 May 1994. p. 229-236 1994.

Derjaguin, B.V., Fedoseev, D.V., Crystallization of diamond from gas at the periodic pulse supersaturation: Progress in Surface Science v. 45 no. 1-4 Jan-Apr 1994. p. 81-83 1994.

Devasahayam, A.J., Lambeth, D.N., Schlesinger, T.E., Stancil, D.D., Laser ablation for deep etching: Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting v. 8 1994. IEEE, Piscataway, NJ, 4CH3463-7. p. 393-394 1994.

Dickinson, J.T., Jensen, L.C., Langford, S.C., Hoagland, R.G., Chemisorptive electron emission as a probe of plastic deformation in reactive metals: Journal of Materials Research v. 9 no. 5 May 1994. p. 1156-1165 1994.

DiNardo, N.J., Nanoscale Characterization of Surfaces and Interfaces: Weinheim, GER, VCH Publ., 163 p, (1994).

Dong, W.P., Sullivan, P.J., and Stout, K.J., Comprehensive study of parameters for characterizing three-dimensional surface topography, III—parameters for characterizing amplitude and some functional properties: Wear, v. 178, nos. 1-2, p. 29-43, (1994a).

Dong, W.P., Sullivan, P.J., and Stout, K.J., Comprehensive study of parameters for characterizing three-dimensional surface topography, IV—parameters for characterizing spatial and hybrid properties: Wear, v. 178, nos. 1-2, p. 45-60, (1994b).

Douglas, James M., Gravenor, John G., Fatigue crack properties of thermal reactor irradiated NIMONIC PE16: ASTM Special Technical Publication no. 1175 1994. ASTM, Philadelphia, PA, p. 679-695 1994.

Drakopoulou, A., Feke, D.L., Manas-Zloczower, I., Aggregate structure, Effect on the agglomerate morphology and cohesivity, Rubber Chemistry and Technology v. 67 no. 1 Mar-Apr 1994. p. 17-26 1994.

Drelich, Jaroslaw, Miller, Jan D., Effect of solid surface heterogeneity and roughness on the contact angle/drop (bubble) size relationship: Journal of Colloid and Interface Science v. 164 no. 1 Apr 1994. p. 252-259 1994.

Dumont, M.L., Nelias, D., Flamand, L., Influence des rugosites et du frottement sur le tenseur des contraintes dans un massif elastique semi-infini Influence of roughness and friction on half-infinite elastic body subsurface stress field: RFM, Revue Francaise de Mecanique no. 2 1994. p. 103-113 1994.

Eddins, W. Harold, Zembrzuski, Thomas J. Jr: Factors affecting accuracy of slope-area discharge determination of the September 1992 flood in Raven Fork, Western North Carolina: Proceedings - National Conference on Hydraulic Engineering pt 1 1994. ASCE, New York. p. 645-649 1994.

El Habti, Abdellatif, Bastien, Francois O., Low temperature limitation on the quality factor of quartz resonators: IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control v. 41 no. 2 Mar 1994. p. 250-255 1994.

El Kissi, N., Leger, L., Piau, J.-M., Mezghani, A., Effect of surface properties on polymer melt slip and extrusion defects: Journal of Non-Newtonian Fluid Mechanics v. 52 no. 2 May 1994. p. 249-261 1994.

Eldridge, Jeffrey I., Ebihara, Ben T., Fiber push-out testing apparatus for elevated temperatures: Journal of Materials Research v. 9 no. 4 Apr 1994. p. 1035-1042 1994.

Enrico, M.P., Fisher, S.N., Watts-Tobin, R.J., Modelling the damping force exerted on a macroscopic object moving through superfluid **3He-B in the ballistic regime: Physica B, Condensed Matter v. 194-96 pt 1 Feb 2 1994. p. 787-788 1994.

Erck, R.A., Nichols, F.A., Schult, D.L., Weibull analysis applied to the pull adhesion test and fracture of a metal-ceramic interface: S T L E Tribology Transactions v. 37 no. 2 Apr 1994. p. 299-304 1994.

Esen, E. B., Obot, N. T., Rabas, T. J., Enhancement, Part I. Heat transfer and pressure drop results for air flow through passages with spirally-shaped roughness: Journal of Enhanced Heat Transfer v. 1 no. 2 1994. p. 145-156 1994.

Etsion, I., Front, I., Model for static sealing performance of end face seals: S T L E Tribology Transactions v. 37 no. 1 Jan 1994. p. 111-119 1994.

Falicheva, A.I., Burdykina, R.I., Gorshunova, V.P., Roughness of the chromium coatings formed in the low-concentrated electrolytes with the organic additives: Zashchita Metallov v. 30 no. 3 May-Jun 1994. p. 322-324 1994.

Fan, Chonglun, Piron, D.L., Sleb, Abderrahman, Paradis, P., Study of electrodeposited nickel-molybdenum, nickel-tungsten, cobalt-molybdenum, and cobalt-tungsten as hydrogen electrodes in alkaline water electrolysis: Journal of the Electrochemical Society v. 141 no. 2 Feb 1994. p. 382-387 1994.

Fang, X.D., Experimental investigation of overall machining performance with overall progressive tool wear at different tool faces:

Wear v. 173 no. 1-2 Apr 1994. p. 171-178 1994.

Fann, Shin, Yang, Wen-Jei, Zhang, Nengli, Local heat transfer in a rotating serpentine passage with rib-roughened surfaces: International Journal of Heat and Mass Transfer v. 37 no. 2 Jan 1994. p. 217-228 1994.

Felloni, L., Gatto, A., Ippolito, R., Iuliano, L., WED machinability of a 25% silicon carbide particle reinforced 6061/Al alloy composite: Integrated Design and Manufacturing of Composites American Society of Mechanical Engineers, Petroleum Division, PD v. 64 no. 2 1994. ASME, New York. p. 79-85 1994.

Fernandes, J.J., Da Silva, C. Pacheco, Rosa, L. Guerra, Martins, C. Saraiva, Effects of surface roughness on the flexural strength of a hard metal: Journal of Materials Science v. 29 no. 8 Apr 15 1994. p. 2008-2012 1994.

Fernandes, P.J.L., Jones, D.R.H., Effects of load ratio and cyclic frequency on the fatigue crack growth rate of 63/37 brass in liquid gallium: Scripta Metallurgica et Materialia v. 31 no. 7 Oct 1 1994. p. 809-813 1994.

Ferro, Vito, Baiamonte, Giorgio, Flow velocity profiles in gravel-bed rivers: Journal of Hydraulic Engineering v. 120 no. 1 Jan 1994. p. 60-80 1994.

Fialko, N.M., Prokopov, V.G., Meranova, N.O., Borisov, Yu.S., Korzhik, V.N., Sherenkovskaya, G.P., Single particle-substrate thermal interaction during gas-thermal coatings fabrication: Fizika i Khimiya Obrabotki Materialov no. 1 Jan-Feb 1994. p. 70-78 1994.

Fischer, G., Hagemeyer, A., Dembowski, J., Hibst, H., Improvement of adhesion of Co-Cr layers by plasma surface modifications of the PET substrate: Journal of Adhesion Science and Technology v. 8 no. 2 1994. p. 151-161 1994.

Fisher, J., Dowson, D., Hamdzah, H., Lee, H.L., Effect of sliding velocity on the friction and wear of UHMWPE for use in total artificial joints: Wear v. 175 no. 1-2 Jun 1994. p. 219-225 1994.

Foerster, Joerg, Rain measurement on buoys using hydrophones: IEEE Journal of Oceanic Engineering v. 19 no. 1 Jan 1994. p. 23-29 1994.

Fontes, A., Jeandin, M., Uteza, Olivier, Sentis, Marc, Frainais, Michel, Excimer laser processing of nodular iron: Materials and Manufacturing Processes v. 9 no. 3 1994. p. 415-427 1994.

Fottev, N.K., Electroerosion machining and control of the surface quality of technological equipment: Elektronnaya Obrabotka Materialov no. 2 Mar-Apr 1994. p. 3-7 1994.

Frank, N., Springholz, G., Bauer, G., Surface evolution during MBE growth of EuTe studied by UHV-STM and RHEED investigations: Mechanisms of Thin Film Evolution, Materials Research Society Symposium Proceedings v. 317 1994. Pittsburgh, PA, p. 173-178 1994.

Frayssinet, P., Tourenne, F., Rouquet, N., Conte, P., Delga, C., Bonel, G., Comparative biological properties of HA plasma-sprayed coatings having different crystallinities: Journal of Materials Science, Materials in Medicine v. 5 no. 1 Jan 1994. p. 11-17 1994.

Freund, L.B., Evolution of roughness on the surface of a strained elastic material due to stress-driven surface diffusion: Acta Mechanica Sinica/Lixue Xuebao v. 10 no. 1 Feb 1994. p. 16-26 1994.

Fries, Th., Oster, K., Wandelt, K., In situ scanning tunneling microscopy of three-point bending investigations: Acta Metallurgica et Materialia v. 42 no. 8 Sep 1994. p. 3129-3136 1994.

Fries, Thomas, Oster, Klaus, Wandelt, Klaus, In-situ stress investigations on thin copper films with the STM: Advanced Materials v. 6 no. 6 Jun 1994. p. 473-476 1994.

Fuchs, Wermer, Schickel, Klaus-Peter, New ideas concerning aircraft icing forecast: Proceedings of the International Offshore and Polar Engineering Conference v. 2 1994. Int Soc of Offshore and Polar Engineers (ISOPE), Golden, CO, p. 484-487 1994.

Fujii, Y., Ogawa, T., Shigematsu, T., Nakamura, M., Yamaguchi, M., Shigi, T., Effect of surface roughness on the eddy viscosity of superfluid **4He: Physica B, Condensed Matter v. 194-96 pt 1 Feb 2 1994. p. 563-564 1994.

Fukahori, Y., Seki, W., Stress analysis of elastomeric materials at large extension using the finite element method: Journal of Materials Science v. 29 no. 10 May 15 1994. p. 2767-2774 1994.

Fukuda, Toshio, Nishibori, Kenji, Matsuura, Hideo, Arai, Fumihito, Sakai, Satoru, Kanasige, Masanori, Study on wall surface mobile robots (2nd report, mechanism of model with variable structural crawler and running experimental results): Nippon Kikai Gakkai Ronbunshu, C Hen/ Transactions of the Japan Society of Mechanical Engineers, Part C v. 60 no. 569 Jan 1994. p. 211-217 1994.

Fukunaga, H., Kawaguchi, H., Ohta, Y., Kakehashi, H., Ogasawara, H., Fukuhara, M., Effects of insulation and surface roughness on high frequency magnetic properties of 10 MHz in thin amorphous ribbons: Materials Science & Engineering A, Structural Materials, Properties, Microstructure and Processing v. 181-82 pt 2 May 15 1994. p. 884-887 1994.

# 1994 G-K

Gabour, L.A., Lienhard, J.H. V, Wall roughness effects on stagnation-point heat transfer beneath an impinging liquid jet: Journal of Heat Transfer, Transactions ASME v. 116 no. 1 Feb 1994. p. 81-87 1994.

Ganesh Sundara Raman, S., Padmanabhan, K.A., Effect of surface roughness on the room temperature low cycle fatigue life of alloy nimonic 90: Journal of Materials Science Letters v. 13 no. 10 May 15 1994. p. 708-710 1994.

Geiger, M., Gropp, A., Laser fusion cutting of stainless steel with a pulsed Nd,YAG laser, Welding Research Abroad v. 40 no. 2 Feb 1994. p. 22-26 1994.

Gilicinski, Andrew G., Rynders, Rebecca M., Beck, Scott E., Strausser, Yale E., Stets, James R., Felker, Brian S., Bohling, David A., Study of silicon surface roughness by atomic force microscopy: Diagnostic Techniques for Semiconductor Materials Processing, Materials Research Society Symposium Proceedings v. 324 1994. Pittsburgh, PA, p. 391-396 1994.

Gilley, J.E., Kottwitz, E.R., Darcy-Weisbach roughness coefficients for selected crops: Transactions of the ASAE v. 37 no. 2 Mar-Apr 1994. p. 467-471 1994.

Goch, Gert, Volk, Raimund, Contactless surface measurement with a new acoustic sensor: CIRP Annals v. 43 no. 1 1994. p. 487-490 1994.

Gorbachev, N.M., Losik, T.P., Pavlinov, M.I., The theory of integral characteristics of spatial flow as applied to calculate dynamic coefficients of gas bearings: Trenie i Iznos v. 15 no. 1 Jan-Feb 1994. p. 84-92 1994.

Govindaraju, Rao S., Kavvas, M. Levent, Spectral approach for analyzing the rill structure over hillslopes. Part 1. Development of stochastic theory: Journal of Hydrology v. 158 no. 3-4 Jun 15 1994. p. 333-347 1994.

Grabec, I., Kuljanic, E., Characterization of manufacturing processes based upon acoustic emission analysis by neural networks: CIRP Annals v. 43 no. 1 1994. p. 77-80 1994.

Grenier, R.R. Jr., Luettich, R.A. Jr., Westerink, J.J., Comparison of 2D and 3D models for computing shallow water tides in a friction-dominated tidal embayment: Proc 3 Int Conf Estuarine Coastal Model 3 1994. ASCE, New York. p. 58-70 1994.

Groves, J.F., Elzey, D.M., Wadley, N.G., Fiber fracture during the consolidation of metal matrix composites: Acta Metallurgica et Materialia v. 42 no. 6 Jun 1994. p. 2089-2098 1994.

Guffond, D., Hedde, T., Prediction of ice accretion, comparison between the 2D and 3D codes, Recherche Aerospatiale no. 2 1994. p. 103-115 1994.

Guo, Zhancheng, Wang, Daguang, Xu, Zhihong, Kinetics of graphite dissolution in molten iron and surface structure of corroded graphite: Huagong Yejin/Engineering Chemistry & Metallurgy v. 15 no. 1 Feb 1994. p. 1-6 1994.

Haberfield, C.M., Johnston, I.W., Mechanistically-based model for rough rock joints: International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts v. 31 no. 4 Aug 1994. p. 279-292 1994.

Haga, Toshio, Motomura, Mitsugu, Effect of formation factor on the roll-sticking distance of Al-Si alloy foil in single rapid solidification method: Keikinzoku/Journal of Japan Institute of Light Metals v. 44 no. 5 May 1994. p. 257-262 1994.

Haga, Toshio, Motomura, Mitsugu, Effects of the polishing condition of the roll on the surface of foils of pure aluminum and Al-Si alloy manufactured by single roll rapid solidification: Keikinzoku/Journal of Japan Institute of Light Metals v. 44 no. 1 Jan 1994. p. 22-27 1994.

Hagen, L.J., Armbrust, D.V., Plant canopy effects on wind erosion saltation: Transactions of the ASAE v. 37 no. 2 Mar-Apr 1994. p. 461-465 1994.

Hailey, J.L., Fisher, J., Dowson, D., Sampath, S.A., Johnson, R., Elloy, M., Tribological study of a series of retrieved Accord knee explants: Medical Engineering & Physics v. 16 no. 3 May 1994. p. 223-228 1994.

Hammad, A.M., Issa, M.A., Fractal dimension as a measure of roughness of concrete fracture trajectories: Advanced Cement Based Materials v. 1 no. 4 May 1994. p. 169-177 1994.

Hammiche, A., Webb, R.P., Wilson, I.H., Scanning tunnelling microscopy study of thin gold films evaporated on silicon: Vacuum v. 45 no. 5 May 1994. p. 569-573 1994.

Hamblin, M.G., and Stachowiak, G.W., Measurement of fractal surface profiles obtained from scanning electron and laser scanning microscope images and contact profile meter: Journal of Computer-Assisted Microscopy, v. 6, no. 4, p. 181-194, (1994).

Han, Hongtao, Boudreau, Robert, Bowen, Terry, Tan, Song-sheng, Reed, Michael L., Etching defects on KOH etched silicon - implementation of silicon bench technology for low cost packaging: Proceedings - Electronic Components and Technology Conference 1994. IEEE, Piscataway, NJ. p. 625-631 1994.

Hayes, R.A., Ralston, J., Molecular-kinetic theory of wetting: Langmuir, v. 10 no. 1 Jan 1994. p. 340-342 1994.

Hazlett, R.D., Furr, M.J., Navarro, R., Correlation for miscible flood displacement efficiency in the San Andres with NMR relaxation: SPE Advanced Technology Series v. 2 no. 2 Apr 1994. p. 185-189 1994.

Hennings, Ingo, Stolte, Siegfried, Ziemer, Friedwart, Experimental method to measure surface signature generation by sea bottom undulations: IEEE Journal of Oceanic Engineering v. 19 no. 1 Jan 1994. p. 36-40 1994.

Hignett, P., Hopwood, W.P., Estimates of effective surface roughness over complex terrain: Boundary-Layer Meteorology v. 68 no. 1-2 Feb 1994. p. 51-73 1994.

Hills, D.A., Mechanics of fretting fatigue: Wear v. 175 no. 1-2 Jun 1994. p. 107-113 1994.

Himmelsbach, J., Noll, B., Wittig, S., Experimental and numerical studies of evaporating wavy fuel films in turbulent air flow: International Journal of Heat and Mass Transfer v. 37 no. 8 May 1994. p. 1217-1226 1994.

Hodel, Hanspeter, Kersten, Thomas P., Storchenegger, Isidor, New approach for the estimation of extreme roughness in torrents by hydraulic and photogrammetry: Proceedings - National Conference on Hydraulic Engineering pt 1 1994. ASCE, New York. p. 697-701 1994.

Hofmann, S., Zalar, A., Depth profiling with sample rotation - Capabilities and limitations: Surface and Interface Analysis v. 21 no. 5 May 1994. p. 304-309 1994.

Hong, Jeng Hour, Lin, Jen Fin, Lee, Ke Yang, Effect of surface irregularities on the tribological behavior of steel rollers under rolling-sliding contact: Journal of Tribology, Transactions of the ASME v. 116 no. 2 Apr 1994. p. 209-218 1994.

Hong, Kwang Taek, Imadojemu, Harris, Webb, R.L., Effects of oxidation and surface roughness on contact angle: Experimental Thermal and Fluid Science v. 8 no. 4 May 1994. p. 279-285 1994.

Hosokawa, Y., Furukawa, K., Surface flow and particle settling in a coastal reed field: Water Science and Technology v. 29 no. 4 1994. p. 45-53 1994.

Huang, Dongzhou, Wang, Ton-Lo, Shahawy, Mohsen, Dynamic loading of a rigid frame bridge: Proc Struct Congr 94 1994. ASCE, New York. p. 85-90 1994.

Huang, J.C.A., Liou, Y., Liu, H.L., Wu, Y.J., Epitaxial growth and structure characterization of single-crystal Co(112 over bar 0) films on Cr(100) surfaces: Journal of Crystal Growth v. 139 no. 3-4 May 2 1994. p. 363-371 1994.

Huang, Z.P., Sun, Y., Bell, T., Friction behaviour of TiN, CrN and (TiAl)N coatings: Wear v. 173 no. 1-2 Apr 1994. p. 13-20 1994.

Huber, N., Sommerfeld, M., Characterization of the cross-sectional particle concentration distribution in pneumatic conveying systems: Powder Technology v. 79 no. 3 Jun 1994. p. 191-210 1994.

Ibnabddjalil, M'hamed, Loh, Ih-Houng, Chu, C.C., Blumenthal, Norman, Alexander, Harold, Turner, David, Effect of surface plasma treatment on the chemical, physical, morphological, and mechanical properties of totally absorbable bone internal fixation devices: Journal of Biomedical Materials Research v. 28 no. 3 Mar 1994. p. 289-301 1994.

Ignatiev, M., Smurov, I., Martino, V., Flamant, G., Dupuy, C., Application of laser surface alloying for improvement of wear resistance of bearing steels working at severe conditions and of light titanium alloys: Journal De Physique v. 4 no. 4 Apr 1994. p. 39-42 1994.

Ikeno, Kazuhiro, Marui, Moritoshi, Yoshino, Hidehiro, Development of CNC gear grinding machine with truing attachment: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 60 no. 1 Jan 1994. p. 133-137 1994.

Imado, Keiji, Miyagawa, Hiroomi, Miura, Atuyoshi, Ueyama, Nobuyuki, Behavior of traction oils under impact loads: S T L E Tribology Transactions v. 37 no. 2 Apr 1994. p. 378-386 1994.

Inagaki, N., Tasaka, S., Hibi, K., Improved adhesion between plasma-treated polyimide film and evaporated copper: Journal of Adhesion Science and Technology v. 8 no. 4 pt 2 1994. p. 395-410 1994.

Ippolito, I., Daccord, G., Hinch, E.J., Hulin, J.P., Echo tracer dispersion in model fractures with a rectangular geometry: Journal of Contaminant Hydrology v. 16 no. 1 May 1994. p. 87-108 1994.

Ishibashi, Akira, Sonoda, Keiji, Effects of surface roughness and type of oil on traction characteristics between steel rollers: Wear v. 175 no. 1-2 Jun 1994. p. 39-49 1994.

Issa, M.A., Hammad, A.M., Assessment and evaluation of fractal dimension of concrete fracture surface digitized images: Cement and Concrete Research v. 24 no. 2 1994. p. 325-334 1994.

Ivakin, A.N., Modelling of sound scattering by the sea floor: Journal De Physique v. 4 no. 5 pt 2 May 1994. p. 1095-1098 1994.

Ivana, Maresova, Evaluating flow resistance using height of roughness protrusions: Proceedings - National Conference on Hydraulic Engineering pt 1 1994. ASCE, New York. p. 712-716 1994.

Ivanov, L.I., Komissarov, A.P., Polyakov, V.A., On physical sputtering of W(Cu) composite as a divertor material for fusion reactor: Fizika i Khimiya Obrabotki Materialov no. 1 Jan-Feb 1994. p. 5-10 1994.

Jang, Dong Y., Liou, J., Cho, U., Study of residual stress distribution in the machined stainless steel components: S T L E Tribology Transactions v. 37 no. 3 Jul 1994. p. 594-600 1994.

Jenkins, G.A., Black, R.G., Velocity distributions in channels with variable roughness: Hydraulics Working with the Environment National Conference Publication - Institution of Engineers, Australia no. 94 pt 1 1994. IE Aust, Crows Nest, NSW, Aust. p. 111-116 1994.

Jinen, Eiichi, Ni, Qing-Qing, Nakamura, Atsushi, Fracture mechanisms and AE of single-fiber composite (Effect of fiber surface treatment and roughness): Nippon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan Society of Mechanical Engineers, Part A v. 60 no. 571 Mar 1994. p. 705-711 1994.

Jing, L., Nordlund, E., Stephasson, O., 3-D constitutive model for rock joints with anisotropic friction and stress dependancy in sheer stiffness: International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts v. 31 no. 2 Apr 1994. p. 173-178 1994.

Johanson, J.R., Realities of bulk solids properties testing: Bulk Solids Handling v. 14 no. 1 Jan-Mar 1994. p. 133-134 1994.

Johnsen, W.A., and Brown, C.A., Comparison of several methods for calculating fractal-based topographic characterization parameters: Fractals, v. 2, no. 3, p. 437-440, (1994).

Johnston, A.J., Nguyen, N., Volker, R.E., Round buoyant jet in shallow water, Bed shear velocity: Journal of Hydraulic Research v. 32 no. 2 1994. p. 233-250 1994.

Jolic, K.I., Nagarajah, C.R., Thompson, W., Non-contact, optically based measurement of surface roughness of ceramics, Measurement Science & Technology v. 5 no. 6 Jun 1994. p. 671-684 1994.

Jones, O.R., Hauser, V.L., Popham, T.W., No-tillage effects on infiltration, runoff, and water conservation on dryland: Transactions of the ASAE v. 37 no. 2 Mar-Apr 1994. p. 473-479 1994.

Jonsdottir, F., Freund, L.B., Evolution of surface roughness of a strained epitaxial film due to interface misfit dislocations: Mechanisms of Thin Film Evolution, Materials Research Society Symposium Proceedings v. 317 1994. p. 309-314 1994.

Kadota, Michio, Kondoh, Chikashi, Chubachi, Noriyoshi, Reduction of deviation of frequency characteristics of SAW filters by mechanical polishing of ZnO film surface: Electronics & Communications in Japan, Part III, Fundamental Electronic Science (English translation of Denshi Tsushin Gakkai Ronbunshi) v. 77 no. 1 Jan 1994. p. 95-103 1994.

Kamata, Hidehiro, Kanauchi, Tadahiko, Analysis of roughness of cutting surface with NC router (influence of grain direction in solid wood): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 60 no. 569 Jan 1994. p. 303-307 1994.

Kanda, Torahiko, Mitsuhashi, Masashige, Iseki, Yuji, Mirror-finish slicing for optical device endface: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 60 no. 2 Feb 1994. p. 245-249 1994.

Kapoor, A., Williams, J.A., Johnson, K.L., Steady state sliding of rough surfaces: Wear v. 175 no. 1-2 Jun 1994. p. 81-92 1994.

Karzhavin, V.V., Criterion of articles quality, produced on the base of multisteps sheet metal stamping: Kuznechno-Shtampovochnoe Proizvodstvo no. 6 Jun 1994. p. 7-10 1994.

Kasischke, Eric S., Bourgeau-Chavez, Laura L., French, Nancy H.F., Observations of variations in ERS-1 SAR image intensity associated with forest fires in Alaska: IEEE Transactions on Geoscience and Remote Sensing v. 32 no. 1 Jan 1994. p. 206-210 1994.

Kees, Norbert, Detlefsen, Juergen, Road surface classification by using a polarimetric coherent radar module at millimeter waves: IEEE MTT-S International Microwave Symposium Digest v. 3 1994. IEEE, Piscataway, NJ. p. 1675-1678 1994.

Kellenbenz, J., Hahne, E., Condensation of pure vapours and binary vapour mixtures in forced flow: International Journal of Heat and Mass Transfer v. 37 no. 8 May 1994. p. 1269-1276 1994.

Kerans, R.J., Jero, P.D., Parthasarathy, T.A., Issues in the control of fiber matrix interfaces in ceramic composites: Composites Science and Technology, v. 51 no. 2 1994. p. 291-296 1994.

Ketola, K.S., Wang, Suwen, Hallock, R.B., Hebard, A.F., Third sound and quartz crystal resonance studies of helium adsorbed to C//6//0: Physica B, Condensed Matter v. 194-96 pt 1 Feb 2 1994. p. 651-652 1994.

Keysar, S., Semiat, R., Hasson, D., Yahalom, J., Effect of surface roughness on the morphology of calcite crystallizing on mild steel: Journal of Colloid and Interface Science v. 162 no. 2 Feb 1994. p. 311-319 1994.

Khairallah, Y., Arefi, F., Amouroux, J., Leonard, D., Bertrand, P., Surface fluorination of polyethylene films by different glow discharges. Effects of frequency and electrode configuration: Journal of Adhesion Science and Technology v. 8 no. 4 pt 2 1994. p. 363-381 1994.

Khanbilvardi, Reza M., Afshari, Shahriar, Hydraulic properties of surface runoff on ash-mixed concrete pavement: Proceedings of the 21st Annual Conference on Water Policy and Proc 21 Annu Conf Water Policy Manage Solving Probl 1994. ASCE, New York. p. 205-209 1994.

Khanna, S.K., Shukla, A., Influence on fiber inclination and interfacial conditions on fracture in composite materials: Experimental Mechanics v. 34 no. 2 Jun 1994. p. 171-180 1994.

Khrustalev, Dmitry, Faghri, Amir, Leland, John, Thermal analysis of axially-grooved heat pipes: Advances in Heat Transfer American Society of Mechanical Engineers, Petroleum Division, PD v. 64 no. 1 1994. ASME, New York. p. 39-54 1994.

Kienow, Kenneth K., Kienow, Karl E., Kienow, Paul E., Flow capacity of rehabilitated sanitary sewers: Proceedings of the International Conference on Hydraulics of Pipelines 1994. ASCE, New York. p. 28-42 1994.

Kienzle, O., Staub, J., Tschudi, T., Description of an integrated scatter instrument for measuring scatter losses of 'superpolished' optical surfaces: Measurement Science & Technology v. 5 no. 6 Jun 1994. p. 747-752 1994.

Kim, B.H., Chu, C.N., Effect of cutter mark on surface roughness and scallop height in sculptured surface machining: Computer Aided Design v. 26 no. 3 Mar 1994. p. 179-188 1994.

Kim, H.S., Wang, X.M., Nik Abdullah, N.A.H., Effect of temperature on fatigue crack growth in the polymer ABS: Fatigue and Fracture of Engineering Materials & Structures v. 17 no. 3 Mar 1994. p. 361-367 1994.

Kirby, S.K., Ting, D.Z.Y., McGill, T.C., Fluctuations in the transmission properties of a quantum dot with interface roughness and impurities: Semiconductor Science and Technology v. 9 no. 5 SUPPL May 1994. p. 918-921 1994.

Kishi, S., Yamauchi, Y., Inoue, M., Narita, S., Friction coefficient between model ice and roughened model surface: Proceedings of the International Offshore and Polar Engineering Conference v. 2 1994. Int Soc of Offshore and Polar Engineerns (ISOPE), Golden, CO, p. 559-564 1994.

Kiyono, Satoshi, Yamatani, Mitsuru, Ohe, Atushi, Huang, Peisen, Suzuki, Hirofumi, Critical angle type optical stylus with optical skid (2nd report) - construction by two optical sources and one receiving optical system: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 60 no. 1 Jan 1994. p. 114-118 1994.

Klumpp, Cassie C., Baird, Drew C., Study of friction factors in the upper reaches of the Rio Grande: Proceedings - National Conference on Hydraulic Engineering pt 1 1994. ASCE, New York. p. 702-706 1994.

Kodikara, J.K., Johnston, I.W., Shear behaviour of irregular triangular rock-concrete joints: International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts v. 31 no. 4 Aug 1994. p. 313-322 1994.

Komai, Takeshi, Umezu, Minoru, Ignition of methane-air mixture by frictional sparks from light alloys: Safety Science v. 17 no. 2 Jan 1994. p. 91-102 1994.

Konar, J., Maity, P., Oxidation of polypropylene using phase-transferred permanganate as oxidant: Journal of Materials Science Letters v. 13 no. 3 Feb 1 1994. p. 197-199 1994.

Koops, H.W.P., Huebner, B., Watanabe, M., Metrology-chip for measurement of diameter and astigmatism of an electron beam with nm resolution using moire amplification: Microelectronic Engineering v. 23 no. 1-4 Jan 1994. p. 387-390 1994.

Koski, John A., Measuring pavement profile: Aberdeen's Concrete Construction v. 39 no. 5 May 1994. p. 416-422 1994.

Koukoulas, A.A., Jordan, B.D., Understanding gloss anisotropy in machine-made papers: Journal of Pulp and Paper Science v. 20 no. 2 Feb 1994. p. 55-60 1994.

Kowal, K., Xie, L., Huq, R., Farrington, G.C., In situ atomic force microscopy study of the plating and stripping of silver: Journal of the Electrochemical Society v. 141 no. 1 Jan 1994. p. 116-122 1994.

Kowalski, Zbigniew W., Ion-bombardment modification of surface morphology of solids. Part II. Changes in surface shape: Journal of Materials Science v. 29 no. 13 Jul 1 1994. p. 3542-3552 1994.

Krekel, G., Huettinger, K.J., Hoffman, W.P., Silver, D.S., Relevance of the surface structure and surface chemistry of carbon fibres in their adhesion to high-temperature thermoplastics. Part I. Surface structure ang morphology: Journal of Materials Science v. 29 no. 11 Jun 1 1994. p. 2968-2980 1994.

Kruth, Jean-Pierre, Klewais, Paul, Optimization and dynamic adaptation of the cutter inclination during five-axis milling of sculptured surfaces: CIRP Annals v. 43 no. 1 1994. p. 443-448 1994.

Kubono, Takayoshi, Mogami, Masahiko, Some characteristics of switching contacts riveted on the tips of both supporting arms arranged partially in parallel: Electronics & Communications in Japan, Part II, Electronics (English translation of Denshi Tsushin Gakkai Ronbunshi) v. 77 no. 1 Jan 1994. p. 87-98 1994.

Kulikov, A.I., Hardening of steels and irons by surface passivation and heat treatment: Metallovedenie i Termicheskaya Obrabotka Metallov no. 1 Jan 1994. p. 10-12 1994.

Kuranish, Shigeru, Naganuma, Furami, Nakazawa, Masathosi, Iwakuma, Tetsuo, Mechanical behavior of metal contact joint: Journal of Structural Engineering v. 120 no. 7 Jul 1994. p. 1977-1990 1994.

Kuskov, V.N., Parfenov, V.D., Effect of zirconium nitride coating and thermal-electric hardening of tungsten-free hard alloy cutting plates on their wear resistance and surface quality of longitudinal turn cut items: Fizika i Khimiya Obrabotki Materialov no. 1 Jan-Feb 1994. p. 79-82 1994.

Kuz'min, V.L., Mikhailov, A.V., Reflection of light from the surface near the critical point: Optics and Spectroscopy (English translation of Optika i Spektroskopiya) v. 76 no. 1 Jan 1994. p. 84-91 1994.

## 1994 L-R

Lachmar, Thomas E., Application of fracture-flow hydrogeology to acid-mine drainage at the Bunker Hill Mine, Kellogg, Idaho: Journal of Hydrology v. 155 no. 1-2 Mar 1 1994. p. 125-149 1994.

Lapujoulade, Jean, Roughening of metal surfaces: Surface Science Report v. 20 no. 4 1994. p. 191-249 1994.

Larsson, Roland, Lundberg, Jan, Simplified solution to the combined squeeze-sliding lubrication problem: Wear v. 173 no. 1-2 Apr 1994. p. 85-94 1994.

Lavoie, C., Nissen, M.K., Eisebitt, S., Johnson, S.R., Mackenzie, J.A., Tiedje, T., Light scattering measurements of surface roughness in molecular beam epitaxy growth of GaAs: Diagnostic Techniques for Semiconductor Materials Processing, Materials Research Society Symposium Proceedings v. 324 1994. Pittsburgh, PA, p. 119-124 1994.

Lee, Si C., Ren, Ning, Subsurface stress field created by three-dimensionally rough bodies in contact with traction: S T L E Tribology Transactions v. 37 no. 3 Jul 1994. p. 615-621 1994.

Lee, T.H., Mills, N.J., Surface roughness and impact strength of injection-molded polystyrene: Journal of Materials Science v. 29 no. 10 May 15 1994. p. 2704-2712 1994.

Leskova, T., Keller, J., Renk, K., Roughness-induced absorption in layered superconductors: Physica C, Superconductivity v. 225 no. 1-2 May 10 1994. p. 190-198 1994.

Li, Jiangwei, Chiu, Cheng-hsin, Gao, Huajian, Dislocation nucleation from a surface cusp: Mechanisms of Thin Film Evolution, Materials Research Society Symposium Proceedings v. 317 1994. Pittsburgh, PA, p. 303-308 1994.

Li, X.S., Low, I.M., Evaluation of advanced alumina-based ceramic tool inserts when machining high-tensile steel: Journal of Materials Science v. 29 no. 12 Jun 15 1994. p. 3121-3127 1994.

Lin, Hong-Rong, Chen, Yung-Kun, Development of new alloy steel grade which facilitates elimination of process annealing: Ironmaking and Steelmaking v. 21 no. 1 1994. p. 27-31 1994.

Lin, J.A., Unertl, W.N., Nanoscale deformations of polyimide with a force microscope: Journal of Adhesion Science and Technology v. 8 no. 8 1994. p. 913-927 1994.

Lin, Wen-Kan, Chen, Yen-Chen, Kulakowski, Bodan T., Streit, Donald A., Dynamic wheel/pavement force sensitivity to variations in heavy vehicle parameters, speed and road roughness, Heavy Vehicle Systems v. 1 no. 2 1994. p. 139-155 1994.

Lin, Yao, Schill, John, Wang, Runwen, Precision evaluation of a common-path interferometer in measurement of optical surfaces: Guangxue Xuebao/Acta Optica Sinica v. 14 no. 1 Jan 1994. p. 55-61 1994.

Liu, Henry, Richards, James L., Hydraulics of stationary capsule in pipe: Journal of Hydraulic Engineering v. 120 no. 1 Jan 1994. p. 22-40 1994.

Liu, J.S., Laverty, S.J., Maguire, P., McLaughlin, J., Molloy, J., Role of an electrolysis reduction in copper-electroplating on transparent semiconductor tin oxide: Journal of the Electrochemical Society v. 141 no. 4 Apr 1994. p. L38-L40 1994.

Liu, Zhining, Liu, Zhixing, Liu, Chaoqun, McCormick, Steve, Multilevel methods for temporal and spatial flow transition simulation in a rough channel: International Journal for Numerical Methods in Fluids v. 19 no. 1 Jul 15 1994. p. 23-40 1994.

Louis, D., Laporte, Ph., Gachon, P., Improvement of dry development of photoresist in a RIPE source for 0.4 to 0.35 mu m technologies: Microelectronic Engineering v. 23 no. 1-4 Jan 1994. p. 271-274 1994.

Lucas, Victor, Danaila, Sterian, Bonneau, Olivier, Frene, Jean, Roughness influence on turbulent flow through annular seals: Journal of Tribology, Transactions of the ASME v. 116 no. 2 Apr 1994. p. 321-329 1994.

Luders, A., Surface microtopography of aluminium plates for offset litho printing: Galvanotechnik v. 85 no. 5 May 1994. p. 1460-1466 1994.

Lynch, S.P., Radtke, T.C., Wicks, B.J., Byrnes, R.T., Fatigue crack growth in nickel-based superalloys at 500-700 degree: Fatigue and Fracture of Engineering Materials & Structures v. 17 no. 3 Mar 1994. p. 297-311 1994.

Ma, F., Flow of a thin film over a rough rotating disk: Probabilistic Engineering Mechanics v. 9 no. 1-2 1994. p. 39-45 1994.

Maboudian, R., Bressler-Hill, V., Pond, K., Wang, X.-S., Petroff, P.M., Weinberg, W.H., Effect of growth rate on the surface morphology of MBE-grown GaAs(001)-(2 x 4): Surface Science v. 302 no. 1-2 Jan 1994. p. L269-L274 1994.

Mainsah, E., Stout, K.J., Sullivan, P.J., Effects of quantization on 3D topography characterization: Measurement Science & Technology v. 5 no. 2 Feb 1994. p. 172-181 1994.

Majkova, E., Luby, S., Jergel, M., Senderak, R., George, B., Vaezzadeh, M., Ghanbaja, J., Characterization of obliquely deposited tungsten/silicon multilayers: Thin Solid Films v. 238 no. 2 Feb 1 1994. p. 295-301 1994.

Makino, Toshiro, Kurata, Hidetoshi, Scattering of radiation by flake-type particle with rough surface: Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B v. 60 no. 570 Feb 1994. p. 530-536 1994.

Mayes, A.M., Russell, T.P., Bassereau, P., Baker, S.M., Smith, G.S., Evolution of order in thin block copolymer films: Macromolecules v. 27 no. 3 Jan 31 1994. p. 749-755 1994.

Mayeur, C., Sainsot, P., Flamand, L., Modelisation du contact rugueux elastoplastique (modeling of rough elastoplastic contact): RFM, Revue Francaise de Mecanique no. 2 1994. p. 83-91 1994.

McAneney, K.J., Lagouarde, J.P., Patchwork problem, Effects of sub-pixel scale non-uniformity on the spatially-averaged sensible heat flux: International Journal of Remote Sensing v. 15 no. 8 May 20 1994. p. 1687-1694 1994.

McCabe, A.R., Jones, A.M., Bull, S.J., Mechanical properties of ion-beam deposited diamond-like carbon on polymers: Diamond and Related Materials v. 3 no. 3 Feb 1994. p. 205-209 1994.

McGarrity, John P., Hayward, Gordon, Powell, David J., Facet ensemble approach for evaluation of array performance in ultrasonic NDE: IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control v. 41 no. 1 Jan 1994. p. 19-25 1994.

Melkote, S.N., Thangaraj, A.R., Enhanced end milling surface texture model including the effects of radial rake and primary relief angles: Journal of Engineering for Industry, Transactions of the ASME v. 116 no. 2 May 1994. p. 166-174 1994.

Mel'nikov, V.V., Belov, V.D., Features of manufacturing automobile wheel disks from silumin by low-pressure casting: Liteinoe Proizvodstvo no. 3 Mar 1994. p. 21-22 1994.

Merrill, T., Setoguchi, T., Perez-Blanco, Horacio, Compact bubble absorber design and analysis: Proceedings of the International Absorption Heat Pump Conference Proc Int Absorpt Heat Pump Conf 1994. ASME, New York. p. 217-223 1994.

Michalski, Jacek, Pawlus, Pawel, Description of honed cylinders surface topography: International Journal of Machine Tools & Manufacture v. 34 no. 2 Feb 1994. p. 199-210 1994.

Millar, R.G., Quick, M.C., Flow resistance of high-gradient gravel channels: Proceedings - National Conference on Hydraulic Engineering pt 1 1994. ASCE, New York. p. 717-721 1994.

Millick, Keshaw N., Lansey, Kevin E., Tickle, Kevin S., Determining optimal parameter

dimensions for water distribution network models: Proceedings of the 21st Annual Conference on Water Policy and Proc 21 Annu Conf Water Policy Manage Solving Probl 1994. ASCE, New York. p. 758-761 1994.

Mitsuya, Yasunaga, Koumura, Tetsushi, Transient response solution applying ADI scheme to Boltzmann flow-modified Reynolds equation being averaged with respect to surface roughness: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 60 no. 569 Jan 1994. p. 247-254 1994.

Miyazaki, N., Hamao, T., Solid particle erosion of thermoplastic resins reinforced by short fibers: Journal of Composite Materials v. 28 no. 9 1994. p. 871-883 1994.

Mizutani, Hideyuki, Notoya, Hisakimi, Yamada, Shigeru, Takayanagi, Akira, Okamura, Kenjiro, Mechanical properties and machinability of various aluminum alloys: Keikinzoku/Journal of Japan Institute of Light Metals v. 44 no. 1 Jan 1994. p. 16-21 1994.

Mohamed Ali, H.S., Efficiency of stilling basins: Hydraulics Working with the Environment National Conference Publication - Institution of Engineers, Australia no. 94 pt 1 1994. IE Aust, Crows Nest, NSW, Aust. p. 229-233 1994.

Mohamed, H.S., Bed roughened stilling basins: Proceedings of the Institution of Civil Engineers, Water Maritime and Energy v. 106 no. 1 Mar 1994. p. 33-41 1994.

Mohri, N., Takezawa, H., Saito, N., On-the-machine measurement in EDM process by a calibration system with polyhedra: CIRP Annals v. 43 no. 1 1994. p. 203-206 1994.

Monadjemi, Parviz, General Formulation of Best Hydraulic Channel Section: Journal of Irrigation and Drainage Engineering v. 120 no. 1 Jan-Feb 1994. p. 27-35 1994.

Monno, M., Semeraro, Q., Veniali, F., Wire EDM of SiC reinforced aluminum: Integrated Design and Manufacturing of Composites American Society of Mechanical Engineers, Petroleum Division, PD v. 64 no. 2 1994. ASME, New York. p. 87-91 1994.

Motomura, Yoshihiro, Tagami, Katsumichi, Critical issues on pass-wear durability for CoCr perpendicular flexible disks: Journal of Magnetism and Magnetic Materials v. 134 no. 2-3 Jun 1994. p. 370-375 1994.

Muller, V.M., Aleinikova, I.N., Shcherbina, G.I., Toporov, Yu. P., Derjaguin, B.V., Influence of contact electrification on the adhesion of dielectric elastic spheres subjected to external loads before detachment: Progress in Surface Science v. 45 no. 1-4 Jan-Apr 1994. p. 199-222 1994.

Nakamura, Y., Kaneko, N., Nakamura, M., Nezu, H., Synergistic effects of benzalacetone and benzophenone on the electrocrystallization of tin from acid stannous sulphate solutions: Journal of Applied Electrochemistry v. 24 no. 5 May 1994. p. 404-410 1994.

Nakazawa, Naoki, Terashima, Takashi, Saeki, Hiroshi, Ice-material surface interaction in ice friction and ice adfreeze bonding: Proceedings of the International Offshore and Polar Engineering Conference v. 2 1994. P Int Soc of Offshore and Polar Engineers (ISOPE), Golden, CO, p. 540-544 1994.

Narayanan, Ram M., Pardipuram, Rajan, Rundquist, Donald C., Statistical characteristics of simulated radar imagery from bare soil surfaces, Effects of surface roughness and soil moisture variability, IEEE Transactions on Geoscience and Remote Sensing v. 32 no. 1 Jan 1994. p. 159-168 1994.

Nguyen, T.P., Amgaad, K., Cailler, M., Tran, V.H., Improved adhesion of aluminum layers deposited on plasma and thermally treated poly(paraphenylene-vinylene) films substrates: Journal of Adhesion Science and Technology v. 8 no. 7 1994. p. 821-831 1994.

Niedermeier, W., Stierstorfer, J., Kreitmeier, S., Metz, O., Goeritz, D., Morphological investigations on carbon-black particles by atomic force microscopy: Rubber Chemistry and Technology v. 67 no. 1 Mar-Apr 1994. p. 148-158 1994.

Nishi, Shigeo, Osaka, Hideo, Mean flow quantities for the turbulent boundary layer over an equivalent smooth-mesh rough wall: Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B v. 60 no. 574 Jun 1994. p. 1985-1992 1994.

Nishiyama, Shuji, Research on vibration characteristics of vehicle-passenger dynamic interaction on highway bridge induced by large-sized vehicle: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 60 no. 569 Jan 1994. p. 16-23 1994.

Novarini, Jorge C., Caruthers, Jerald W., Partition wavenumber in acoustic backscattering from a two-scale rough surface described by a power-Law spectrum: IEEE Journal of Oceanic Engineering v. 19 no. 2 Apr 1994. p. 200-207 1994.

Nowak, Andrzej S., Load model for bridge design code: Canadian Journal of Civil Engineering v. 21 no. 1 Feb 1994. p. 36-49 1994.

Nugent, T.P., Improved roll texturing through implementation of statistical process control: Iron & Steelmaker (I&SM) v. 21 no. 6 Jun 1994. p. 21-27 1994.

Ogurtsov, A.P., Gubarev, I.V., Kashcheev, M.A., Brodskij, S.S., Poletaev, V.P., Higher steel product quality in bottom casting under slag through expanding gate system: Stal' no. 1 Jan 1994. p. 27-29 1994.

Ohlsson, R., 3D topography of cylinder bores: Dept. Prod. Eng., Chalmers Univ. Tech., Sweden, ISBN 91-7032-997-4 (May 1994).

Ohya, Kaoru, Itotani, Takayuki, Kawata, Jun, Monte Carlo simulation of secondary electron emission from rough surface: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 33 no. 2 Feb 1994. p. 1153-1154 1994.

Okada, Tsunenori, Iwai, Yoshiro, Fukuda, Yasuo, Formation and progression of cavitation-erosion surface: Nippon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan Society of Mechanical Engineers, Part A v. 60 no. 570 Feb 1994. p. 563-568 1994.

Otsuka, Koji, Niwa, Futoshi, Ikeda, Yoshiho, Viscous flow around oscillating roughened cylinders: Proceedings of the International Offshore and Polar Engineering Conference v. 3 1994. Int Soc of Offshore and Polar Engineerns (ISOPE), Golden, CO, p. 460-467 1994.

Palasantzas, G., Krim, J., Scanning tunneling microscopy study of the dynamic scaling properties of rough vapor-deposited silver films: Mechanisms of Thin Film Evolution, Materials Research Society Symposium Proceedings v. 317 1994. Pittsburgh, PA, p. 111-116 1994.

Panagopoulos, C.N., Stathakopoulou, G., Electrodeposited zinc coatings on aluminum: Materials Letters v. 18 no. 5-6 Feb 1994. p. 299-303 1994.

Petrich, Ralf, Stenzel, Olaf: Modeling of transmittance, reflectance and scattering of rough polycrystalline CVD diamond layers in application to the determination of optical constants, Optical Materials v. 3 no. 1 Feb 1994. p. 65-76 1994.

Plies, Jeffrey B., Grant, Nicholas J., Structure and properties of spray formed 7150 containing Fe and Si: International Journal of Powder Metallurgy (Princeton, New Jersey) v. 30 no. 3 Jul 1994. p. 335-343 1994.

Poon, C.Y., Sayles, R.S., Numerical contact model of a smooth ball on an anisotropic rough surface: Journal of Tribology, Transactions of the ASME v. 116 no. 2 Apr 1994. p. 194-201 1994.

Popa-Simil, L., Ivan, A., Dumitru, M., Ivanov, E., Gomic, C., Benea, C., Dima, V., Machining influence on the surface of some roughness samples: Vacuum v. 45 no. 4 Apr 1994. p. 419-420 1994.

Poulouse, M.M., Impedance UTD model for the prediction of terrain undulation and roughness effects in radiating systems: IEE Conference Publication no. 384 1994. Publ by IEE, Michael Faraday House, Stevenage, UK, p. 40-43 1994.

Pranevicius, L., Raila, S., Vosylius, J., Initial stages of development of the surface topography induced by ion bombardment: Surface & Coatings Technology v. 63 no. 1 Jan 24 1994. p. 57-63 1994.

Prasad, P.B.S.N.V., Ahila, S., Vasudevan, R., Seshadri, S.K., Fatigue strength of nickel electrodeposits prepared in ultrasonically agitated bath: Journal of Materials Science Letters v. 13 no. 1 Jan 1 1994. p. 15-16 1994.

Priester, Donnan E., Effect of die surface characteristics on processing additive performance: Annual Technical Conference - ANTEC, Conference Proceedings pt 2 1994. Soc of Plastics Engineers, Brookfield, CT, p. 2059-2061 1994.

Psang, Dain Lin, Analysis and modeling of optical elements and systems: Journal of Engineering for Industry, Transactions of the ASME v. 116 no. 1 Feb 1994. p. 101-106 1994.

Qi, H.S., Mills, B., Rowe, W. Brian, Analysis of real contact length in abrasive machining processes using contact mechanics: Wear v. 176 no. 1 Jul 1994. p. 137-141 1994.

Qin, Ren-Yan, Donnet, Jean-Baptiste: Study of carbon fiber surfaces by scanning tunneling microscopy, part III. Carbon fibers after surface treatments, Carbon v. 32 no. 2 1994. p. 323-328 1994.

Raheem, Ruby, Glick, Jeff, Surface micro roughness and etch rate comparison of RCA based cleans using the atomic force microscope: Conference Proceedings - Annual Semiconductor Pure Water and Chemicals Conference 1994. Balazs Analytical Laboratory, Sunnyvale, CA, p. 226-241 1994.

Rajmohan, B., Radhakrishnan, V., On the possibility of process monitoring in grinding by spark intensity measurements: Journal of Engineering for Industry, Transactions of the ASME v. 116 no. 1 Feb 1994. p. 124-129 1994.

Ramulu, M., Arola, D., Influence of abrasive waterjet cutting conditions on the surface quality of graphite/epoxy laminates: International Journal of Machine Tools & Manufacture v. 34 no. 3 Apr 1994. p. 295-313 1994.

Rao, M.V.H., Mathur, B.K., and Chopra, K.L., Evaluation of the scaling exponent of self-affine fractal surface from a single scanning probe microscope image: Applied Physics Letters, v. 65, no. 1, p. 124-126, (1994).

Rappich, J., Jungblut, H., Aggour, M., Lewerenz, H.J., Electrochemical smoothing of silicon (111): Journal of the Electrochemical Society v. 141 no. 8 Aug 1994. p. L99-L102 1994.

Ritchie, Jerry C., Grissinger, Earl H., Murphey, Joseph B., Garbrecht, Jurgen D., Measuring channel and gully cross-sections with an airborne laser altimeter: Hydrological Processes v. 8 no. 3 May-Jun 1994. p. 237-243 1994.

Roberts, P.T., Fryer-Taylor, R.E.J., Hall, D.J., Wind-tunnel studies of roughness effects in gas dispersion: Atmospheric Environment v. 28 no. 11 Jun 1994. p. 1861-1870 1994.

Rosental, A., Niilisk, A., Optical in situ characterization of deposit formulation under alternate supply of diethylzinc and CO//2 at room temperature: Surface Science v. 307-09 no. 1-3 pt B Apr 20 1994. p. 1188-1192 1994.

Rosyid, Daniel Mohammad, Critical path incremental loading procedure for system reliability analysis of offshore structures: International Offshore and Polar Engineering Conference, Proc., v. 4 1994. Int, Soc, Offshore and Polar Engineers (ISOPE), Golden, CO, p. 452-459 1994.

Russ, J.C., Fractal Surfaces: New York, Plenum Press, 309 p. , (1994). [includes software on two diskettes; for both PC and Macintosh]

Rye, R.R., Surface stress-dependent adhesion to fluorinated polymers: Journal of Polymer Science, Part B, Polymer Physics v. 32 no. 10 Jul 30 1994. p. 1777-1785 1994.

# 1994 S-Z

Saito, S., Takeda, K., Soumura, T., Tani, T., Maeda, T., Effects of surface roughness and patches on the work function of cobalt: Physica Status Solidi (A) Applied Research v. 142 no. 1 Mar 1994. 4p 1994.

Sarkar, Nirupam, Chauduri, B.B., Efficient differential box-counting approach to compute fractal dimension of image: IEEE Transactions on Systems, Man and Cybernetics v. 24 no. 1 Jan 1994. p. 115-120 1994.

Sarnet, Th., Montagne, J.E., Inglesakis, G., Autric, M., Barrallier, L., Barreau, G., Modification of metals by high energy excimer laser: Journal De Physique v. 4 no. 4 Apr 1994. p. 69-72 1994.

Scheckler, Edward W., Ogawa, Taro, Shukuri, Shoji, Takeda, Eiji, Material representations and algorithms for nanometer lithography simulation: IEICE Transactions on Electronics v. E77-C no. 2 Feb 1994. p. 98-105 1994.

Schulz, K.J., Viswanathan, K.V., Factors influencing the abrasion resistance of thin-film magnetic media: S T L E Tribology Transactions v. 37 no. 3 Jul 1994. p. 552-558 1994.

Scott, P.J., Recent advances in areal characterization: International Surface Colloquium, Technical University of Chemnitz-Zwickau, Germany, Proceedings, p. 151-159, (1994).

Sedahmed, G.H., Hosny, A.Y., Fadally, O.A., El-Mekkawy, I.M., Mass transfer at rough gas-sparged electrodes: Journal of Applied Electrochemistry v. 24 no. 2 Feb 1994. p. 139-144 1994.

Seibt, M., Imschweiler, J., Hefner, H.A., Formation of extrinsic defects at the amorphous-crystalline interface in ion-implanted silicon: Defect-Interface Interactions, Materials Research Society Symposium Proceedings v. 319 1994. Pittsburgh, PA, p. 189-194 1994.

Sentenac, A., Sentenac, A., Greffet, J.J., Design of surface microrelief with selective radiative properties: International Journal of Heat and Mass Transfer v. 37 no. 4 Mar 1994. p. 553-558 1994.

Sharp, P.K., Clayton, J.Q., Clark, G., Fatigue resistance of peened 7050-T7451 aluminium alloy - repair and re-treatment of a component surface: Fatigue and Fracture of Engineering Materials & Structures v. 17 no. 3 Mar 1994. p. 243-252 1994.

Shemegon, V.I., Chip peculiarities and surface state when turning R6M5 steel with superabrasive tools: Sverkhtverdye Materialy no. 1 Jan-Feb 1994. p. 53-57 1994.

Shen, Liang, Rangayyan, Rangaraj M., Desautels, J.E. Leo, Application of shape analysis to mammographic calcifications: IEEE Transactions on Medical Imaging v. 13 no. 2 Jun 1994. p. 263-274 1994.

Shimada, Shoichi, Ikawa, Naoya, Tanaka, Hiroaki, Uchikoshı, Junichi, Structure of micromachined surface simulated by molecular dynamics analysis: CIRP Annals v. 43 no. 1 1994. p. 51-54 1994.

Silverstein, M.S., Breuer, O., Dodiuk, H., Surface modification of UHMWPE fibers: Journal of Applied Polymer Science v. 52 no. 12 Jun 20 1994. p. 1785-1795 1994.

Singh, R., Satyanarayana, T., Automated Field Irrigation System using Side Weirs: Journal of Irrigation and Drainage Engineering v. 120 no. 1 Jan-Feb 1994. p. 48-59 1994.

Singh, V.P., Derivation of errors of kinematic-wave and diffusion-wave approximations for space-independent flows: Water Resources Management v. 8 no. 1 1994. p. 57-82 1994.

Sinnecker, J.P., Grossinger, R., Turtelli, R. Sato, Exel, G., Greifeneder, G., Kuss, C., Quenched-in stresses in amorphous ribbons: Journal of Magnetism and Magnetic Materials v. 133 no. 1-3 May 1 1994. p. 20-23 1994.

Slastin, A.M., Hydraulic cylinders manufacture: Kuznechno-Shtampovochnoe Proizvodstvo no. 2 Feb 1994. p. 18 1994.

Smulders, Peter F.M., Deterministic modelling of indoor radio propagation at 40-60 Ghz: Wireless Personal Communications v. 1 no. 2 1994-1995. p. 127-135.

Soares, S.F., Baselt, D.R., Black, J.P., Jungling, K.C., Stowell, W.K., Float-polishing process and analysis of float-polished quartz: Applied Optics v. 33 no. 1 Jan 1 1994. p. 89-95 1994.

Sommerfeld, Martin, Importance of detailed measurements for the validation of numerical models and methods for dispersed two-phase flows: Experimental and Computational Aspects of Validation of Multiphase Flow CFD Codes, Am. Soc. Mech. Engineers, Fluids Engineering Div., FED v. 180 1994. ASME, New York. p. 1-14 1994.

Soni, J.S., Chakraverti, G., Machining characteristics of titanium with rotary electro-discharge machining: Wear v. 171 no. 1-2 Jan 1994. p. 51-58 1994.

Sorkhel, S.K., Bhattacharyya, b., Parametric control for optimal quality of the workpiece surface in ECM: Journal of Materials Processing Technology v. 40 no. 3-4 Jan 1994. p. 271-286 1994.

Sornakumar, T., Annamalai, V.E., Krishnamurthy, R., Gokularathnam, C.V., Lapping of composite of Y-TZP and Ce-TZP: Journal of Materials Science Letters v. 13 no. 3 Feb 1 1994. p. 187-189 1994.

Stetler, Larry D., Stock, David E., On the bursting frequency in wind-generated fully rough turbulent boundary layer flows: Turbulent Flows American Society of Mechanical Engineers, Fluids Engineering Division, FED v. 188 1994. ASME, New York. p. 25-30 1994.

Stolte, Siegfried, Shallow water sonar conditions and radar backscatter: IEEE Journal of Oceanic Engineering v. 19 no. 1 Jan 1994. p. 30-35 1994.

Stolte, Siegfried, Short-wave measurements by a fixed tower-based and a drifting buoy system: IEEE Journal of Oceanic Engineering v. 19 no. 1 Jan 1994. p. 10-22 1994.

Stout, K.J., ed., Three Dimensional Surface Topography—Measurement, Interpretation, and Applications—A survey and bibliography: London and Bristol PA, Penton Press, 236 p. , (1994).

Strupczewski, Witold Gustaw, Chezy formula versus theory and common sense: Proceedings - National Conference on Hydraulic Engineering pt 1 1994. ASCE, New York. p. 662-666 1994.

Sugiyama, Hitoshi, Akiyama, Mitsunobu, Yamanaka, Kazunori, Hirata, Masaru, Numerical analysis of fully developed turbulent flow in rectangular duct with longitudinal roughness element: Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B v. 60 no. 574 Jun 1994. p. 1970-1977 1994.

Surgers, C., Strunk, C., v. Lohneysen, H., Effect of substrate temperature on the microstructure of thin niobium films: Thin Solid Films v. 239 no. 1 Feb 15 1994. p. 51-56 1994.

Suzuki, Hirofumi, Kodera, Sunao, Shimano, Hiroki, Study on aspherical surface polishing using a small rotating tool (2nd report) - polishing of asymmetric aspherical surface: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 60 no. 6 Jun 1994. p. 827-831 1994.

Takahashi, Kazuhiko, Hoshina, Eisuke, Effect of surface defects on mechanical properties of powder forged material: Journal of the Japan Society of Powder and Powder Metallurgy v. 41 no. 3 Mar 1994. p. 285-288 1994.

Takahashi, Kazuhiko, Hoshina, Eisuke, Effect of manufacturing conditions on surface defect production of powder forged material: Journal of the Japan Society of Powder and Powder Metallurgy v. 41 no. 3 Mar 1994. p. 281-284 1994.

Takakura, Norio, Yamaguchi, Katsuhiko, Effect of interstage annealing on increase in limit strain of aluminum sheets: Keikinzoku/Journal of Japan Institute of Light Metals v. 44 no. 1 Jan 1994. p. 41-47 1994.

Tejchman, J., Wu, W., Numerical study on sand and steel interfaces: Mechanics Research Communications v. 21 no. 2 Mar-Apr 1994. p. 109-119 1994.

Tejedor, M., Garcia, J.A., Carrizo, J., Anisotropy and roughness in as-quenched Co//6//6Si//1//6B//1//2Fe//4Mo//2 amorphous ribbons: Journal of Magnetism and Magnetic Materials v. 133 no. 1-3 May 1 1994. p. 342-343 1994.

Tempelman, Linda A., Park, Samuel, Hammer, Daniel A., Motion of model leukocytes near a wall in simple shear flow: Biotechnology Progress v. 10 no. 1 Jan-Feb 1994. p. 97-108 1994.

Titmarsh, G.W., Sallaway, M.M., Jukes, P., Farming systems and design specifications of interrow furrows: Hydraulics Working with the Environment National Conference Publication - Institution of Engineers, Australia no. 94 pt 1 1994. IE Aust, Crows Nest, NSW, Aust. p. 205-210 1994.

Tomita, Takashi, Kim, June-Q, Iwata, Koichiro, Matsudaira, Ryuzo, Miyaike, Yoshihito, Wave forces acting on triangular roughness of washboard-like sea bottom: Proceedings of the International Offshore and Polar Engineering Conference v. 3 1994. Int Soc of Offshore and Polar Engineerns (ISOPE), Golden, CO, p. 190-197 1994.

Trolier-McKinstry, Susan, Spectroscopic ellipsometry studies of ferroelectric thin films: Ferroelectrics v. 152 no. 1-4 pt 2 1994. p. 169-174 1994.

Tsai, Whey-Fone, Ettema, Robert, Modified eddy viscosity model in fully developed asymmetric channel flows: Journal of Engineering Mechanics v. 120 no. 4 Apr 1994. p. 720-732 1994.

Tseytlin, Yakov M., Special measures for thin coatings measurement: Instrumentation in the Aerospace Industry, Proceedings of the International Symposium 1994. Instrument Society of America, Research Triangle Pk, NC, p. 181-189 1994.

Tsionsky, V., Gileadi, E., Use of the quartz crystal microbalance for the study of adsorption from the gas phase: Langmuir v. 10 no. 8 Aug 1994. p. 2830-2835 1994.

Tsukruk, Vladimir V., Foster, Mark D., Reneker, Darrell H., Schmidt, Albert, Wu, Hong, Knoll, Wolfgang, Stability and modification of polyglutamate Langmuir-Blodgett bilayer films: Macromolecules v. 27 no. 5 Feb 28 1994. p. 1274-1280 1994.

Tsymbal, E., Evaluation of the magnetic dipolar fields from layered systems on atomic scale: Journal of Magnetism and Magnetic Materials v. 130 no. 1-3 Feb 1994. p. L6-L12 1994.

Tupper, K.J., Colton, R.J., Brenner, D.W., Simulations of self-assembled monolayers under compression. Effect of surface asperities: Langmuir v. 10 no. 7 Jul 1994. p. 2041-2043 1994.

Uematsu, Yasushi, Yamada, Motohiko, Aerodynamic forces on circular cylinders of finite height: Journal of Wind Engineering and Industrial Aerodynamics v. 51 no. 2 Feb 1994. p. 249-265 1994.

Ugarte, Alfonso, Madrid, Manuel, Roughness coefficient in mountain rivers: Proceedings - National Conference on Hydraulic Engineering pt 1 1994. ASCE, New York. p. 652-656 1994.

Unal, Cetin, Pasamehmetoglu, Kemal O., Numerical investigation of the effect of heating methods on saturated nucleate pool boiling: International Communications in Heat and Mass Transfer v. 21 no. 2 Mar-Apr 1994. p. 167-177 1994.

Urbakh, M., Daikhin, L., Influence of the surface morphology on the quartz crystal microbalance response in a fluid: Langmuir v. 10 no. 8 Aug 1994. p. 2836-2841 1994.

Uskov, I.V., Krushenko, G.G., Pickup preventing coating for steel castings: Liteinoe Proizvodstvo no. 3 Mar 1994. p. 9-10 1994.

Valiantzas, John D., Simple method for identification of border infiltration and roughness characteristics: Journal of Irrigation and Drainage Engineering v. 120 no. 2 Mar-Apr 1994. p. 233-249 1994.

van Gent, M.R.A., Modelling of wave action on and in coastal structures: Coastal Engineering v. 22 no. 3-4 Feb 1994. p. 311-339 1994.

van Splunder, I., Coops, H., Schoor, M.M., Tackling the bank erosion problem, (Re-introduction of willows on riverbanks): Water Science and Technology v. 29 no. 3 1994. p. 379-381.

van Zyl, F.H., Strydom, J.P., Smit, P.P.J., Emmerich, R., High-temperature ageing of a low-alloy steel in the presence and absence of strain: International Journal of Pressure Vessels and Piping v. 59 no. 1-3 1994. p. 91-105 1994.

Varichenko, V.S., and eight others, Scanning tunnelling microscopy of diamond irradiated with high energy ions: Diamond and Related Materials, v. 3, nos. 4-6, p. 711-714, (1994).

Vasil'ev, A.G., Murav'ev, V.V., Smirnov, A.N., Ultrasonic method for jogging testing: Defektoskopiya no. 2 Feb 1994. p. 71-72 1994.

Vieux, Baxter E., Farajalla, Nadim S., Capturing the essential spatial variability in distributed hydrological modelling, hydraulic roughness, Hydrological Processes v. 8 no. 3 May-Jun 1994. p. 221-236 1994.

Vigil, Gene, Xu, Zhenghe, Steinberg, Suzi, Israelachvile, Jacob, Interactions of silica surfaces: Journal of Colloid and Interface Science v. 165 no. 2 Jul 1994. p. 367-385 1994.

Volkova, A.V., Kopyl, E.A., Estimation of subsurface sea water movements from surface sound scattering characteristics: Akusticheskii Zurnal v. 40 no. 02 Mar-Apr 1994. p. 225-230 1994.

Wang, Hsin-Fu, Nelson, John C., Lin, Chien-Li, Gerberich, William W., Interfacial stability and mechanical properties of Al//2O//3 fiber reinforced Ti matrix composites: Journal of Materials Research v. 9 no. 2 Feb 1994. p. 498-503 1994.

Wang, Q., Cheng, H.S., Fine, M.E., Frictional behaviors of some nitrogen ceramics in conformal contact with tin coated Al-Si alloy, steel and MMC: S T L E Tribology Transactions v. 37 no. 3 Jul 1994. p. 587-593 1994.

Wang, X., Carreau, P.J., Lafleur, P.G., Entrance pressure loss and extrudate roughness during HDPE extrusion: Annual Technical Conference - ANTEC, Conference Proceedings pt 1 1994. Soc of Plastics Engineers, Brookfield, CT, p. 1175-1179 1994.

Wang, X., Clement, B., Carreau, P.J., Lafleur, P.G., Extrudate roughness of high-density polyethylene and linear low-density polyethylene, Determination of key parameters using screening design: Polymer

Engineering and Science v. 34 no. 13 Jul 1994. p. 1047-1055 1994.

Watanabe, Hideo, Ihara, Akio, Hashimoto, Hiroyuki, Hydraulic characteristics of a circular cylinder with a permeable wall: Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B v. 60 no. 574 Jun 1994. p. 1917-1922 1994.

Watanabe, Seiki, Amano, Jun, Furuichi, Hiroshi, Rise in fatigue strength of Ti by extremely mild abrasive processing: Wear v. 174 no. 1-2 May 1994. p. 235-237 1994.

Webster, J., Marinescu, I., Bennett, R., Lindsay, R., Acoustic emission for process control and monitoring of surface integrity during grinding: CIRP Annals v. 43 no. 1 1994. p. 299-304 1994.

Wegmuller, U., Matzler, C., Huppi, R., Schanda, E., Active and passive microwave signature catalog on bare soil (2-12 GHz): IEEE Transactions on Geoscience and Remote Sensing v. 32 no. 3 May 1994. p. 698-702 1994.

Wen, F., Gajdeczko, B., Two-point method for turbulent pipe flow measurements: International Journal of Energy Research v. 18 no. 3 Apr 1994. p. 383-389 1994.

Whitehouse, D.J., Handbook of Surface Metrology: Bristol, UK, Institute of Physics Publishing, 988 p, (1994).

Williams, R. Sam, Feist, William C., Effect of preweathering, surface roughness, and wood species on the performance of paint and stains: Journal of Coatings Technology v. 66 no. 828 Jan 1994. p. 109-121 1994.

Wu, Jiann-Shing, Lee, Min-Jan: Studies on gas counter pressure and low pressure structural foam molding, part III, effect of processing conditions on mechanical properties of molded parts: Plastics, Rubber and Composites Processing and Applications v. 21 no. 3 1994. p. 183-189 1994.

Wu, Jiann-Shing, Lee, Min-Jan: Studies on gas counter pressure and low pressure structural foam molding, part I, process design and effect of processing conditions on surface quality of molded parts: Plastics, Rubber and Composites Processing and Applications v. 21 no. 3 1994. p. 163-171 1994.

Xie, Like, Buckley, L.J., Josefowicz, J.Y., Observations of polyaniline surface morphology modification during doping and de-doping using atomic force microscopy: Journal of Materials Science v. 29 no. 16 Aug 15 1994. p. 4200-4204 1994.

Xu, Jianlu, Hsieh, Wei Shen, Impacts of roughness bars on the mixing processes: Proceedings - National Conference on Hydraulic Engineering pt 1 1994. ASCE, New York. p. 533-537 1994.

Yamada, Yoji, Cutkosky, Mark R., Tactile sensor with 3-axis force and vibration sensing functions and its application to detect rotational slip: Proceedings - IEEE International Conference on Robotics and Automation pt 4 1994. IEEE, Piscataway, NJ. p. 3550-3557 1994.

Yamashita, Tadaoki, Nakashima, Hirotaka, Yasui, Heiji, Nagashima, Michiyoshi, Laser nanometer probe utilizing beam diffraction pattern change as a function of displacements from the focal point: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 60 no. 3 Mar 1994. p. 450-454 1994.

Yan, Biing Hwa, Chen, Min Der, Effect of ultrasonic vibration on electrical discharge machining characteristics of Ti-6Al-4V alloy: Keikinzoku/Journal of Japan Institute of Light Metals v. 44 no. 5 May 1994. p. 281-285 1994.

Yang, Kai, Jeang, Angus, Statistical surface roughness checking procedure based on a cutting tool wear model: Journal of Manufacturing Systems v. 13 no. 1 1994. p. 1-8 1994.

Yaremko, Z.M., Gavryliv, V.D., Yastremskij, A.Ya., Soltys, M.N., Aggregative stability of suspensions and density of their coagulation structure: Kolloidnyi Zhurnal v. 56 no. 1 Jan-Feb 1994. p. 129-132 1994.

Yasui, Heiji, Sato, Kaoru, Matsunaga, Ryuji, Kobayashi, Fukashi, Studies on high flatness polishing of magnetic disk substrate with Al//2O//3 abrasives (1st report) - polishing mechanism and influence of polisher type on polishing results: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 60 no. 1 Jan 1994. p. 128-132 1994.

Yevtushenko, A., Ukhanska, O., Non-stationary temperature field of discrete sliding contact of elastic bodies: Wear v. 176 no. 1 Jul 1994. p. 19-23 1994.

Yim, D.Y., Kim, S.W., Light scattering patterns of simulated engineering surfaces when the surfaces have a sinusoidal waviness: International Journal of Machine Tools & Manufacture v. 34 no. 1 Jan 1994. p. 33-41 1994.

Yokogawa, Munehiko, Furukawa, Yuji, Dressing performance of prismatic monocrystalline diamond dresser: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 60 no. 6 Jun 1994. p. 803-807 1994.

York, R.J., Smith, S.R.P., Dumelow, T., Foxon, C.T., Hilton, D., Orton, J.W., Raman spectroscopy of GaAs-AlAs superlattices, A study of interface roughness: Journal of Luminescence v. 60-61 Apr 1994. p. 349-352 1994.

Yoshinobu, Tatsuo, Iwamoto, Atsushi, Iwasaki, Hiroshi, Scaling analysis of SiO//2/Si interface roughness by atomic force microscopy: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 33 no. 1B Jan 1994. p. 383-387 1994.

Yoshinobu, Tatsuo, Iwamoto, Atsushi, Iwasaki, Hiroshi, Mesoscopic roughness characterization of grown surfaces by atomic force microscopy: Japanese Journal of Applied Physics, Part 2, Letters v. 33 no. 1A Jan 1 1994. p. L67-L69 1994.

Yuan, Z.J., Lee, W.B., Yao, Y.X., Zhou, M., Effect of crystallographic orientation on cutting forces and surface quality in diamond cutting of single crystal: CIRP Annals v. 43 no. 1 1994. p. 39-42 1994.

Zentner, L.K., DeWitt, D.P., White, D.A., Gaskell, D.R., Computer algorithms for radiometric measurement of temperature during the galvanneal process: Metallurgical and Materials Transactions B, Process Metallurgy and Materials Processing Science v. 25 no. 3 Jun 1994. p. 459-465 1994.

Zhang, Tian C., Bishop, Paul L., Gibbs, James T., Effect of roughness and thickness of biofilms on external mass transfer resistance: Critical Issues in Water and Wastewater Treatment National Conference on Environmental Engineering 1994. ASCE, New York. p. 593-600 1994.

Zhong, Z., Venkatesh, V.C., Generation of parabolic and toroidal surfaces on silicon and silicon-based compounds using diamond cup grinding wheels: CIRP Annals v. 43 no. 1 1994. p. 323-326 1994.

Zhou, Yinsheng, Quan, Yongxin, Scuffing failure investigation of GCr15 bearing steel friction pairs: Mocaxue Xuebao/Tribology v. 14 no. 2 Apr 1994. p. 105-114 1994.

Zlatanovic, M., Gredic, T., Kunosic, A., Backovic, N., Whittle, N., Substrate-induced changes in TiN and (Ti, Al)N coatings due to plasma nitriding, Surface & Coatings Technology v. 63 no. 1 Jan 24 1994. p. 35-41 1994.

## 1995 A-B

Abdellateef, M.A., Lemke, H., Heiden, C., Angular dependence of coercive field in DC-sputtered Nd//2Fe//1//4B films: Physica Status Solidi (A) Applied Research v. 147 no. 1 Jan 1995. p. K39- K43.

Abe, Takeji, Nosho, Takayoshi, Tai, Yu-zhu, Matsuzaki, Minoru, himizu, Ichiro, Roughening of contact surface during compressive plastic deformation of polycrystalline copper: Nippon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan Society of Mechanical Engineers, Part A v. 61 no. 587 July 1995. p. 1562-1567.

Abell, A.B., Lange, D.A., Image-based characterization of fracture surface roughness: Microstructrure of Cement-Based Systems/Bonding and Interfaces in Cementitious Materials, Materials Research Society Symposium Proceedings v. 370, 1995. Pittsburgh, PA, p. 107-113.

Abrao, Alexandre M., Aspinwall, David K., Wise, Mike L.H., Tool life and workpiece surface integrity evaluations when machining hardened AISI H13 and AISI E52100 steels with conventional ceramic and PCBNtool materials: Technical Paper - Society of Manufacturing Engineers. MR 1995. 9p.

Adachi, Tsutomu, Ozaki, Tetsuo, Yamamoto, Takeshi, Eguchi, Yoshihiko, atsuuchi, Kazuo, Kawai, Tatsuo, Study of the universal Strouhal number over the wide reynolds numberflow range (effect of surface roughness): Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B v. 61 no. 583 Mar 1995. p. 793-799.

Affatigato, Mario, Osbome, Danny, Haglund, R.F. Jr., Changes in the surface morphology of glass due to abrasion and the deposition of sol-gel thin films: Journal of Non-Crystalline Solids v. 181 no. 1-2 Feb 1 1995. p. 27-38.

Aguirre, Alejandra, Ippolito, Irene, Calvo, Adriana, Henrique, hristian, Bideau, Daniel, Experimental statistical study of the motion of a particle on a rough surface: Proceedings of Engineering Mechanics v. 2 1995. ASCE, New York,. p. 1280-1283.

Aikens, David M., Roussel, Andre, Bray, Michael, Derivation of preliminary specifications for transmitted wavefront and surface roughness for large optics used in inertial confinement fusion: Proceedings of SPIE - The International Society for Optical Engineering v. 2633 1995. Bellingham, WA, p. 350-360.

Aikens, David M., Wolfe, C. Robert, Lawson, Janice K., Use of power spectral density (PSD) functions in specifying optics for the Natl. Ignition Facility: Proceedings of SPIE - The International Society for Optical Engineering v. 2576 1995. Bellingham, WA, p. 281-292.

Ailes-Sengers, Lynn, Ishimaru, Akira, Kuga, Yasuo, Analytical and experimental studies of electromagnetic waves scattered by two-dimensional, dielectric very rough surfaces: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, 5CH35770. p. 1349-1351.

Airiau, O., Khenchaf, A., Daout, F., Saillard, J., Cross-polarized power returned from a random surface, application to the rough sea surface: Oceans Conference Record (IEEE) v. 3 1995. IEEE, Piscataway, NJ, p. 1523-1527.

Ajayi, J.O., Elder, H.M., Kolawole, E.G., Bello, K.A., Darma, M.U., Resolution of the stick-slip friction traces of fabrics: Journal of the Textile Institute v. 86 no. 4 1995. p. 600-609.

Ajayi, Joseph O., Elder, H.M., Effects of finishing treatments on fabric friction: Journal of Testing & Evaluation v. 23 no. 1 Jan 1995. p. 55-58.

Akiyama, Kazuhiro, Naito, Nobumasa, Nagamori, Motoaki, Koya, Hiroshi, orita, Etsuro, Sassa, Kouichi, Suga, Hisaaki, Effect of SC1 process on silicon surface microroughness and oxide breakdown characteristics: Japanese Journal of Applied Physics, Part 2, Letters v. 34 no. 2A Feb 1, 1995. p. L153-L155.

Akkurt, S., On the effect of surface roughness on wear of acetal-metal gear pairs: Wear v. 184 no. 2 May 1995. p. 107-109.

Akpan, U.O., Kujath, M.R., Nonstationary random response of a vehicle with a varying structure: International Journal of Vehicle Design v. 16 no. 6 1995. p. 531-541.

Alauddin, M., El Baradie, M.A., Hashmi, M.S.J., Computer-aided analysis of a surface-roughness model for end milling: Journal of Materials Processing Technology v. 55 no. 2 Nov 15 1995. p. 123-127.

Alcock, J.R., Sorensen, O.T., Relationship of surface slope distributions to the wear mechanisms of ceramics: Tribology International v. 28 no. 7 Nov 1995. p. 475-483.

Allegretti, F., Inoue, M., Nishinaga, T., In-situ observation of GaAs selective epitaxy on GaAs (111)B substrates: Journal of Crystal Growth v. 146 no. 1-4 Jan 1 1995. p. 354-358.

Almqvist, N., Rubel, M., Franconi, E., Surface characterization of SiC composites exposed to deuterium ions, using atomic force microscopy: Materials Science & Engineering A, Structural Materials, Properties, Microstructure and Processing v. A201 no. 1-2 Oct 1995. p. 277-285.

Almqvist, N., Rubel, M., Wienhold, P., Fredriksson, S., Roughness determination of plasma-modified surface layers with atomic force microscopy: Thin Solid Films v. 270 no. 1-2 Dec 1 1995. p. 426-430.

Al-Omari, Bashar, Darter, Michael I., Effect of pavement deterioration types on IRI and rehabilitation: Transportation Research Record no. 1505 Jul 1995. p. 57-65.

Aloufi, M., Santamarina, J.C., Low and high strain macrobehavior of grain masses - the effect of particle eccentricity: Transactions of the ASAE v. 38 no. 3 May-Jun 1995. p. 877-887.

Altbir, Dora, Kiwi, Miguel, Ramirez, Ricardo, Schuller, Ivan K., Dipolar interaction and its interplay with interface roughness: Journal of Magnetism and Magnetic Materials v. 149 no. 3 Sep 1 1995. p. L246-L250.

Alvarez-Borrego, Josue, 1D rough surfaces, glitter function for remote sensing: Optics Communications v. 113 no. 4-6 Jan 1 1995. p. 353-356.

Alvarez-Borrego, Josue, Martinez, Amalia, Statistics of rough surfaces via remote sensing an experiment: Journal of Modern Optics v. 42 no. 11 Nov 1995. p. 2347-2355.

Amadei, B., Carlier, J.-F., Illangasekare, T., Effect of turbulence on fracture flow and advective transport of solutes: International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts v. 32 no. 4 Jun 1995. p. 343-356.

Ameen, M.S., Fractography—fracture topography as a tool in fracture mechanics and stress analysis. An introduction, *in* Ameen, M.S., ed., Fractography—fracture topography as a tool in fracture mechanics and stress analysis: London, Geological Society Special Publication No. 92, p. 1-10, (1995).

Amouzouvi, K.F., Clegg, L.J., Styles, R.C., Mannik, L., Ma, Tian-Chi, rown, S.K., Gu, Bing-Wu, Microstructural changes in laser hardened Zr-2.5Nb alloy: Scripta Metallurgica et Materialia v. 32 no. 2 Jan 15 1995. p. 289-294.

Anderson, J.A., Depth of rain water on road surfaces: Highways and Transportation v. 42 no. 5 May 1995. 4pp.

Ando, Manabu, Negishi, Mahito, Takimoto, Masafumi, Deguchi, Akinobu, akamura, Nobuo, Super-smooth polishing on aspherical surfaces (II), achievement of a super-smooth polishing: Proceedings of SPIE - The International Society for Optical Engineering v. 2576 1995. Bellingham, WA, p. 348-356.

Ando, Manabu, Negishi, Mahito, Takimoto, Masahumi, Deguchi, Akinobu, akamura, Nobuo, Super-smooth polishing on aspherical surfaces: Nanotechnology v. 6 no. 4 Oct 1995. p. 111-120.

Ando, Shigeru, Shinoda, Hiroyuki, Ultrasonic emission tactile sensing: IEEE Control Systems Magazine v. 15 no. 1 Feb 1995. p. 61-69.

Anon: Gas systems a profilometry fine point: Microcontamination v. 13 no. 1 Jan 1995. p. 54-55.

Anon: Optimising sheet steel through 3-D surface analysis: Metallurgia v. 62 no. 12 Dec 1995. p. 407-408.

Anson, Scott, Sahay, C., Head, Linda, Constable, James, Examination of the parameters affecting tack strength as measured in the IPC tack test: American Society of Mechanical Engineers (Paper) 1995. ASME, New York. 10pp 95-WA/EEP-20.

Aoyama, E., Inoue, H., Hirogaki, T., Nobe, H., Kitahara, Y., atayama, T., Study on small diameter drilling in GFRP: Composite Structures v. 32 no. 1-4 1995. p. 567-573.

Apel, Reinhard, Knott, Joseph, Schleusener, Martin, Petschik, Benno, Influence of paper roughness and toner properties on fusing quality: Proceedings of the IS&T's International Congress on Avances in Non-Impact Printing Technologies 1995. Soc Imaging Sci Technol, Springfield, VA, p. 483-485.

Arai, M., Binner, J.G.P., Cross, T.E., Estimating errors due to sample surface roughness in microwave complex permittivity measurements obtained using a coaxial probe: Electronics Letters v. 31 no. 2 Jan 19 1995. p. 115-117.

Arakelian, Artashes K., Microwave radar method of sea surface wind speed and water temperature determination: Combined Optical-Microwave Earth and Atmosphere Sensing - Conference Proceedings 1995. IEEE, Piscataway, NJ, 5TH8015. p. 46-48.

Arakelian, Artashes K., Hambaryan, Astgik K., Combined, microwave Doppler-radar and cross-polarized radiometer system for detection and identification of environment anomalous formations: International Geoscience and Remote Sensing Symposium (IGARSS) v. 3, 1995. IEEE, Piscataway, NJ, 5CH35770. p. 1884-1886.

Armstrong, Mark A., Antoniadis, Dimitri A., Sadek, A., Ismail, K., tern, Frank, Design of Si/SiGe heterojunction complementary metal-oxide- semiconductor transistors: Technical Digest - International Electron Devices Meeting 1995. IEEE, Piscataway, NJ, 5CH35810. p. 761-764.

Arvia, A.J., Salvarezza, R.C., From regular to irregular solid electrode surfaces, a systematic approach to their characterization: Surface Science v. 335 no. 1-3 Jul 20 1995. p. 378-388.

Asakawa, Naoki, Takeuchi, Yoshimi., Automation of polishing work by an industrial robot (4th report, polishing with reference to surface roughness): Nippon Kikai Gakkai

Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 584 Apr 1995. p. 1715-1719.

Ashe, J., Philips, C.D., Speakman, S., Passivation for three-dimensional actuation microstructures using ECR- CVD: IEE Colloquium (Digest) no. 085 1995. IEE, Stevenage, UK, p. 8/1-8/3.

Ashiwake, Noriyuki, Thermal conductance between two microscopically rough surfaces in contact at low contact pressure in a gas environment (effects of surface slope anisotropy and non-Gaussian asperity height distribution): Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B v. 61 no. 585 May 1995. p. 1855-1862.

Assael, M.J., Dymond, J.H., Polimatidou, S.K., Correlation and prediction of dense fluid transport coefficients. VII.Refrigerants: International Journal of Thermophysics v. 16 no. 3 May 1995. p. 761-772.

Astashkevich, B.M., Tribological aspects of wear in parts of cylinder-piston group of powerful ICE: Trenie i Iznos v. 16 no. 1 Jan-Feb 1995. p. 92-105.

Atamny, F., Baiker, A., Direct imaging of the tip shape by AFM: Surface Science v. 323 no. 3 Jan 20 1995. p. L314-L318.

Avanesov, V.S., Babishchevich, P.N., Zuev, M.A., Popkov, A.G., teklov, O.I., Chudanov, V.V., Friction surfaces microrelief formation by means of laser radiation: Fizika i Khimiya Obrabotki Materialov no. 2 Mar-Apr 1995. p. 86-92.

Avlyanov, Jamshid K., Josefowicz, Jack Y., MacDiarmid, Alan G., Atomic force microscopy surface morphology studies of 'in situ'deposited polyaniline thin films: Synthetic Metals v. 73 no. 3 Aug 15 1995. p. 205-208.

Awaji, Naoki, Sugita, Yoshihiro, Ohkubo, Satosi, Nakanishi, Toshiro, akasaki, Kanetake, Komiya, Satoshi, High-accuracy x-ray reflectivity study of native oxide formed in chemical treatment: Japanese Journal of Applied Physics, Part 2, Letters v. 34 no. 8A Aug 1, 1995. p. L1013-L1016.

Aydan, Ömer, and Shimizu, Yasuhiro, Surface morphology characteristics of rock discontinuities with particular reference to their genesis, *in* Ameen, M.S., ed., Fractography—fracture topography as a tool in fracture mechanics and stress analysis: London, Geological Society Special Publication No. 92, p. 11-26, (1995).

Babich, M., Eremich, B., Majer, M., Milich, N., Tribological behaviour of solid lubricating coatings: Trenie i Iznos v. 16 no. 2 Mar-Apr 1995. p. 284-290.

Bacquet, G., Hassen, F., Lauret, N., Armelles, G., Dominguez, P.S., onzalez, L., Optical properties of (113) GaAs/AlAs superlattices grown by molecular beam epitaxy and atomic layer molecular beam epitaxy: Journal of Applied Physics v. 77 no. 1 Jan 1 1995. p. 339-342.

Badaye, M., Ting, Wu, Fukushima, K., Koshizuka, N., Morishita, T., anaka, S., Scanning probe microscopy of NdBa//2Cu//3O//x thin film surfaces: Applied Physics Letters v. 67 no. 15 Oct 9 1995. p. 2155-2157.

Bahar, Ezekiel, Bom, Son Lee, Backscatter optical and microwave cross sections for surfaces characterized by Pearson-Moskowitz spectral density functions - Full wave approach: Combined Optical-Microwave Earth and Atmosphere Sensing - Conference Proceedings 1995. IEEE, Piscataway, NJ, 5TH8015. p. 88-90.

Bahar, Ezekiel, Lee, Bom Son, Huang, Guorong, Kubik, Robert D., Like- and cross-polarized transmission scatter cross sections for random rough surfaces, full wave solutions, Radio Science v. 30 no. 3 May-Jun 1995. p. 545-562.

Bahar, Ezekiel, and Son Lee, Bom, Full wave transmission scatter cross sections for random rough surfaces - comparisons with numerical solutions: IEEE Antennas and Propagation Society, AP-S International Symposium (Digest) v. 4 1995. IEEE, Piscataway, NJ, 5CH35814. p. 1720-1723.

Baik, D.S., No, K.S., Chun, J.S., Yoon, Y.J., Cho, H.Y., Comparative evaluation method of machinability for mica-based glass-ceramics: Journal of Materials Science v. 30 no. 7 Apr 1 1995. p. 1801-1806.

Ballerini, P., Catani, F., Moretti, S., Paloscia, S., Pampaloni, P., igismondi, S., Hydrological modeling integrated with multifrequency SAR data on the Pesa and Vrginio basins of Montespertoli site: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, p. 1055-1057.

Balzer, F., Rubahn, Horst-Guenter, Influence of surface roughness on frequency shift and third-order nonlinear susceptibility of adsorbed particles: Proceedings of SPIE - The International Society for Optical Engineering v. 2547 1995. Bellingham, WA, p. 40-51.

Bandyopadhyay, B.P., Effects of grinding parameters on the strength and surface finish of two silicon nitride ceramics: Journal of Materials Processing Technology v. 53 no. 3-4 Sep 1995. p. 533-543.

Barbosa, Silvia E., Kenny, Jose M., Rheology of thermoplastic matrix short glass fiber composites: Annual Technical Conference - ANTEC, Conference Proceedings v. ? p. 3116-3122.

Barlow, Douglas N., Kim, Yong W., Effect of surface roughness on local heat transfer and film cooling effectiveness: American Society of Mechanical Engineers (Paper) 1995. ASME, New York. 10pp 95-GT-14.

Barlow, Douglas N., Kim, Yong W., Transient liquid crystal technique for convective heat transfer on rough surfaces: American Society of Mechanical Engineers (Paper) 1995. ASME, New York. 10pp 95-GT-6.

Barre, Christian, Barnaud, Guy, High Reynolds number simulation techniques and their application to shaped structures model test: Journal of Wind Engineering and Industrial Aerodynamics v. 57 no. 2-3July 1995. p. 145-157.

Barrett, R.V., Rickards, J., Swales, C., Eustace, R., Use of laser Doppler anemometry in the investigation of roughness particle induced transition on suction surfaces: ICIASF Record, International Congress on Instrumentation in Aerospace Simulation Facilities 1995. IEEE, Piscataway, NJ, 5CH3482-7. p. 52.1-52.6.

Barrick, Donald E., Near-grazing illumination and shadowing of rough surfaces: Radio Science v. 30 no. 3 May-Jun 1995. p. 563-580.

Beck, Fritz, Krueger, Ulrike A., Adherence strength and smoothness of cathodically deposited paints on aluminum: Journal of Coatings Technology v. 67 no. 845 Jun 1995. p. 79-87.

Bellon, P., Chey, S. Jay, Van Nostrand, Joseph E., Ghaly, Mai, ahill, David G., Averback, R.S., Surface damage produced by 20 keV Ga bombardment of Ge(001): Surface Science v. 339 no. 1-2 Sept 20 1995. p. 135-141.

Bender, Dale, Fister, Julius, Performance characteristics of a new tin coating for electric and electronic interconnections: Proceedings of the Technical Program - National Electronic Packaging and Production Conference v. 3 1995. Cahner Exposition Group, Des Plaines, IL,. p. 1482-1491.

Bennett, J.M., Jahanmir, Jay, Podlesny, J.C., Balter, T.L., and Hobbs, D.T., Scanning force microscope as a tool for studying optical surfaces: Applied Optics, v. 34, no. 1, p. 213-230, (1995). [SFM, formerly AFM]

Bennett, Jean M., Tehrani, Mohammad M., Jahanmir, Jay, Podlesny, JohnC., Balter, Tami L., Topographic measurements of supersmooth dielectric films made with a mechanical profiler and a scanning force microscope: Applied Optics v. 34 no. 1 Jan 1 1995. p. 209-212.

Benrakkad, M.S., Lopez-Villegas, J.M., Samitier, J., Morante, J.R., irsten, M., Lange, P., Stress gradient and structural properties of atmospheric and reduced pressure deposited polysilicon layers for micromechanical sensors: Sensors and Actuators, A, Physical v. 51 no. 1 Oct 1995. p. 9-12.

Berger, E.J., Sadeghi, F., Krousgrill, C.M., Finite element modeling of engagement of rough and grooved wet clutches: American Society of Mechanical Engineers (Paper) 1995. ASME, New York. 10pp 95-TRIB-6.

Berishev, I.E., De Anda, F., Mishournyi, V.A., Olvera, J., Iyinskaya, N.D., Vasilyev, V.I., H//2O//2,HF,C//4O//6H//6 (tartaric acid),H//2O etching system for chemical polishing of GaSb: Journal of the Electrochemical Society v. 142 no. 10 Oct 1995. p. L189-L191.

B'erno, Sh.S., Use of the Kirchhoff approximation in scattering from elastic rough surfaces: Akusticheskii Zurnal v. 41 no. 5 Sept-Oct 1995. p. 725-736.

Bertrams, Th., Winkelmann, F., Uttich, Th., Freund, H.-J., eddermeyer, H., Structural characterization of a model catalyst,Pt/Al//2O//3/NiAl(110): Surface Science v. 331-333 no. pt B Jul 1 1995. p. 1515-1519.

Bessent, M.P., Hu, P., Wander, A., King, D.A., Buckled layer structure for atomic adsorption on W left brace 100 right brace, The (root 2 x root 2)R45 degree nitrogen structure from ATLEED: Surface Science v. 325 no. 3 Mar 1 1995. p. 272-278.

Bhattacharyya, D., Chaudhuri, S., Pal, A.K., Surface morphology of films having columnar grains: Vacuum v. 46 no. 3 Mar 1995. p. 241-245.

Bhushan, Bharat, ed., Handbook of Micro/Nanotribology: Mechanical and Materials Science Series, 1, Boca Raton, FL, CRC Publ., 1995, 640 p.

Bhushan, Bharat, Koinkar, V.N., Macro and microtribological studies of $CrO_2$ video tapes: Wear v. 180, nos. 1-2, 1995. p. 9-16.

Bhushan, Bharat, Tian, Xuefeng, Contact analysis of regular patterned rough surfaces in magnetic recording: Journal of Electronic Packaging, Transactions of the ASME v. 117 no. 1, Mar 1995. p. 26-33.

Bian, X., Altounian, Z., Strom-Olsen, J.O., Sutton, M., Structural studies of sputtered Ni//8//0Co//2//0/Cu multilayers: Structure and Properties of Multilayered Thin Films, Materials Research Society Symposium Proceedings v. 382 1995. Pittsburgh, PA, p. 197-202.

Bianchi, L., Grimaud, A., Blein, F., Lucchese, P., Fauchais, P., Comparison of plasma-sprayed alumina coatings by RF and DC plasma spraying: Journal of Thermal Spray Technology v. 4 no. 1 Mar 1995. p. 59-66.

Bishop, Garner C., Smith, Judy, Effects of target-boundary acoustic coupling in shallow water scattering: Oceans Conference Record (IEEE) v. 2 1995. IEEE, Piscataway, NJ, p. 663-672.

Bissessur, H., Gaborit, F., Martin, B., Ripoche, G., Polarisation-independent phased-array demultiplexer on InP with high fabrication tolerance: Electronics Letters v. 31 no. 16 Aug 3 1995. p. 1372-1373.

Bjorkman, C.H., Nishimura, H., Yamazaki, T., Alay, J.L., Fukuda, M., irose, M., Chemical stability of SC1-cleaned hydrogen terminated Si(100) surfaces: Ultraclean Semiconductor Processing Technology and Surface Chemical Cleaning and Passivation, Materials Research Society Symposium Proceedings v. 386, 1995, p. 177-182.

Black, S., Lane, D.M., McDonald, P.J., Hannant, D.J., Mulheron, M., unter, G., Jones, M.R., Visualization of the ingress of polymer treatment coatings into porous building materials by stray-field magnetic resonance imaging: Journal of Materials Science Letters v. 14 no. 17 Sept 1 1995. p. 1175-1177.

Blanchard, D.G., Fletcher, L.S., Contact conductance of selected metal-matrix composites: Journal of Thermophysics and Heat Transfer v. 9 no. 3 Jul-Sep 1995. p. 391-396.

Bobrov, P.P., Schetkin, I.M., Statistics of the thermal microwave emission from furrowed fields: International Geoscience and Remote Sensing Symposium (IGARSS) v. 1, 1995., 5CH35770. p. 281-283.

Bonzel, H.P., Preuss, E., Morphology of periodic surface profiles below the roughening temperature, aspects of continuum theory: Surface Science v. 336 no. 1-2 Aug 1 1995. p. 209-224.

Boone, Gary N., Hodgins, Jessica K., Reflexive responses to slipping in bipedal running robots: IEEE International Conference on Intelligent Robots and Systems v. 3, 1995. IEEE, Piscataway, NJ, 5CB35836. p. 158-164.

Bootsma, T.I.M., Hibma, T., Epitaxial growth of Cu on Si(111)7 X 7, A RHEED study: Surface Science v. 331-333 no. pt A Jul 1 1995. p. 636-640.

Bordag, M., Klimchitskaya, G.L., Mostepanenko, V.M., Corrections to the van der Waals forces in application to atomic force microscopy: Surface Science v. 328 no. 1-2 Apr 20 1995. p. 129-134.

Borruto, A., Taraschi, I., Wear dependence on some factors characterizing the surface state, the hardness, the roughness and the surface degreasing: Wear v. 184 no. 2 May 1995. p. 119-124.

Bouchaud, Elisabeth., Fractal properties of fracture surfaces, roughness indices and relevant length scales: Fractal Aspects of Materials, Materials Research Society Symposium Proceedings v. 367 1995. Pittsburgh, PA, p. 83-94.

Boving, H.J., Hanni, W., Maillat, M., Dan, J.P., Niedermann, P., Diamond films for tribomechanical systems: Mechanical Behavior of Diamond and Other Forms of Carbon, Materials Research Society Symposium Proceedings v. 383 1995. Pittsburgh, PA, p. 297-306.

Bowers, David F., DDW testing of thermal spray coatings: ASTM Special Technical Publication no. 1238 Apr 1995. p. 37-48.

Bozhevolnyi, Sergey I., Vohnsen, Brian, Smolyaninov, Igor I., Zayats, natoly V., Direct observation of surface polariton localization caused by surface roughness: Optics Communications v. 117 no. 5-6 Jun 15 1995. p. 417-423.

Brand, U., Comparison of interferometrical and stylus step height measurements on rough surfaces: Nanotechnology v. 6 no. 3 Jul 1995. p. 81-86.

Braun, J.M., Densley, R.J., Younsi, A., Wintle, H.J., TSDC characteristics of extruded polymer insulated cables: IEEE International Conference on Conduction & Breakdown in Solid Dielectrics 1995. IEEE, Piscataway, NJ. p. 33-37.

Bredow, Jonathan W., Porco, Ronald L., Fung, Adrian K., Tjuatja, aibun, Jezek, Kenneth C., Gogineni, Sivaprasad, Gow, Anthony J., Determination of volume and surface scattering from saline ice using ice sheets with precisely controlled roughness parameters: IEEE Transactions on Geoscience and Remote Sensing v. 33 no. 5 Sep 1995.p. 1214-1221.

Breidenthal, Robert S., Galat-Skey, Regina, Geany, John J., Optical surfacing of one-meter-class reaction bonded silicon carbide: Proceedings of SPIE - The International Society for Optical Engineering v. 2543 1995. Bellingham. WA, p. 248-253.

Breitkreutz, Konrad, Zur Verbesserung der Reflexionseigenschaften unebener metallischer Oberflaechen fur die konfokale Mikroskopie und Laser-Abtastung (Improving the reflective properties of uneven metallic surfaces for confocal microscopy and laser-sampling): Praktische Metallographie/Practical Metallography v. 32 no. 10 Oct 1995.p. 513-517.

Breuer, N., Funtikov, A.M., Stimming, U., Vogel, R., In situ electrochemical STM imaging of roughened gold and platinum electrode surfaces: Surface Science v. 335 no. 1-3 Jul 20 1995. p. 145-154.

Brock, L.M., Sliding contact over a thermoelastic rough surface: Thermoelastic Problems and the Thermodynamics of Continua, American Society of Mechanical Engineers, Applied Mechanics Division, AMD v. 198 1995.ASME, New York. p. 1-10.

Brown, S.R., Simple mathematical model of a rough fracture: Journal of Geophysical Research, v. 100, No. B4, p. 5941-5952, (1995).

Bubukin, I.I., Stankevich, K.S., Ivanov, V.P., Agafonov, M.I., Polarization investigations of sea surface microwave thermal radiation fluctuations: Radiotekhnika i Elektronika v. 40 no. 9 Sept 1995. p. 1368-1379.

Buchwalter, L.P., TiW adhesion to PMDA-ODA polyimide. Surface and interface chemistry: Annual Technical Conference - ANTEC, Conference Proceedings v. 2 1995.Soc of Plastics Engineers, Brookfield, CT, p. 2884-2888.

Buckton, Graham, Darcy, Patricia, McCarthy, David, Extent of errors associated with contact angles 3. The influence of surface roughness effects on angles measured using a Wilhelmy plate technique for powders: Colloids and Surfaces A, Physicochemical and Engineering Aspects v. 95, no. 1 Feb 10 1995. p. 27-35.

Buerhop, Claudia, Weissmann, Rudolf, Enamelling of glass by CO//2 laser treatment: Glass Science and Technology v. 68 no. 5 May 1995. p. 147-152.

Buijs, M., Pasmans, J.M.M., Erosion of glass by alumina particles, transitions and exponents: Wear v. 184 no. 1 Apr 1995. p. 61-65.

Burstein, G.T., Pistorius, P.C., Surface roughness and the metastable pitting of stainless steel in chloride solutions: Corrosion (Houston, TX) v. 51 no. 5 May 1995. p. 380-385.

Burton, David R., Goodall, Anthony J., Atkinson, John T., Lalor, Michael J., Use of carrier frequency shifting for the elimination of phase discontinuities in Fourier transform profilometry: Optics and Lasers in Engineering v. 23 no. 4 1995. p. 245-257.

Butt, Hans-Jurgen, Kuropka, Rolf., Surface structure of latex films, varnishes, and paint films studied with an atomic force microscope: Journal of Coatings Technology v. 67 no. 848 Sep 1995. p. 101-107.

## 1995 C-D

Cai, Yimin, Sun, Chengxiu, Gao, Zhonglin, Wei, Tongli, Light-emission mechanism of MIM tunneling junctions: Tien Tzu Hsueh Pao/Acta Electronica Sinica v. 23 no. 2 Feb 1995. p. 26-29.

Cakmak, M., Simhambhatla, M., Dynamics of uni and biaxial deformation and its effects on the thickness uniformity and surface roughness of poly(ether ether ketone) films: Polymer Engineering and Science v. 35 no. 19 Mid-Oct 1995. p. 1562-1568.

Calvet, Jean-Christophe, Wigneron, Jean-Pierre, Chanzy, Andre, Raju, uresh, Laguerre, Laurent, Microwave dielectric properties of a silt-loam at high frequencies: IEEE Transactions on Geoscience and Remote Sensing v. 33 no. 3 May 1995.p. 634-642.

Campbell, G.R., Islam, M.U., Laser machining of silicon nitride base materials: Materials and Manufacturing Processes v. 10 no. 3 May 1995. p. 509-518.

Campbell, Gregory A., Nagarajan, Ganesh, Small, J. Douglas, Staples, ohn, Solids conveying in low friction and starve fed extruders: Annual Technical Conference - ANTEC, Conference Proceedings v. 1 1995.Soc of Plastics Engineers, Brookfield, CT, p. 268-278.

Campbell, S.A., Cooper, K., Dixon, L., Earwaker, R., Port, S.N., chiffrin, D.J., Inhibition of pyramid formation in the etching of Si p. <100> inaqueous potassium hydroxide-isopropanol: Journal of Micromechanics and Microengineering v. 5 no. 3 Sep 1995. p. 209-218.

Carlstrom, A., Ulander, L.M.H., Validation of backscatter models for level and deformed sea-ice in ERS- 1 SAR images: International Journal of Remote Sensing v. 16 no. 17 Nov 20 1995. p. 3245-3266.

Carneiro, K., Jensen, C.P., Jorgensen, J.F., Garnoes, J., McKeown,.A., Roughness parameters of surfaces by atomic force microscopy: CIRP Annals - Manufacturing Technology v. 44 no. 1 1995. p. 517-522.

Carpinlioglu, M.O., Goksel, O.T., Effect of spherical roughness elements upon transition of a 3-D boundary layer: Aeronautical Journal v. 99 no. 981 Jan 1995. p. 26-28.

Caruthers, Jerald W., Novarini, Jorge C., Semi-empirical basis for a modified Lambert's law for low-grazingbottom backscattering: Oceans Conference Record (IEEE) v. 3 1995. IEEE, Piscataway, NJ, p. 1676-1683.

Carvalho, A.T.G., de Oliveira, A.G., Alves, E.S., Baeta Moreira, M.V., Migration of silicon atoms in planar-doped GaAs/AlGaAs modulation doped fluid effect transistor heterostructures grown by molecular beam epitaxy: Materials Science & Engineering B, Solid-State Materials for Advanced Technology v. B35 no. 1-3 Dec 1995. p. 149-155.

Cebeci, Tuncer, Effect of ice on airfoil stall at high Reynolds numbers: AIAA Journal v. 33 no. 7 Jul 1995. p. 1351-1352.

Celinski, Z., Heinrich, B., Cochran, J.F., Temperature dependence of the bilinear and biquadratic exchange coupling in Fe/Cu, Ag/Fe(001) structures: Journal of Magnetism and Magnetic Materials v. 145 no. 1-2 Mar 1 1995. p. L1-L5.

Chakroun, Walid, Taylor, Robert, Medhin, Mesfin, Investigation of the effect of a smooth strip on rough-wall turbulent boundary layers: International Journal of Heat and Fluid Flow v. 16 no. 3 Jun 1995. p. 163-170.

Chambers, S.A., Gao, Y., Liang, Y., Early stages of MgO epitaxy on lattice-matched Cr//0//.//7Mo//0//.//3(001): Surface Science v. 339 no. 3 Oct 1 1995. p. 297-309.

Chan, C.H., Tsang, L., Sparse-matrix canonical-grid method for scattering by many randomly located cylindrical scatterers: IEEE Antennas and Propagation Society, AP-S International Symposium (Digest) v. 4 1995. IEEE, Piscataway, NJ, 5CH35814. p. 1716-1719.

Chan, Mansun, King, Joseph C., Ko, Ping K., Hu, Chenming, SOI/bulk hybrid technology on SIMOX wafers for high performance circuits with good ESD immunity: IEEE Electron Device Letters v. 16 no. 1 Jan 1995. p. 11-13.

Chang, Chi Shih, Agrawal, Amit P., Fine line thin dielectric circuit board characterization: IEEE Transactions on Components, Packaging, and Manufacturing Technology Part A v. 18 no. 4 Dec 1995. p. 842-850.

Chang, Chung-Shin, Fuh, Kuang-Hua, Study of cutting performance in turning plain carbon steel using TiN- coated, TiCN-coated, and uncoated cemented carbide tools with chamfered maincutting edge: Materials and Manufacturing Processes v. 10 no. 3 May 1995. p. 453-472.

Chang, D.C.M., Goh, J.C.H., Teoh, S.H., Bose, K., Cold extrusion deformation of UHMWPE in total knee replacement prostheses: Biomaterials v. 16 no. 3 Feb 1995. p. 219-223.

Chang, De-An, Lin, Pang, Tseng, Tseung-Yuen, Effects of substrate temperature and oxygen partial pressure on the properties of sputtered zirconium titanate thin films: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 9A Sep 1995. p. 4854-4861.

Chang, L., Deterministic model for line-contact partial elasto-hydrodynamic lubrication: Tribology International v. 28 no. 2 Mar 1995. p. 75-84.

Chang, L., Deterministic modeling and numerical simulation of lubrication between rough surfaces - a review of recent developments: Wear v. 184 no. 2 May 1995. p. 155-160.

Chang, L., Zhao, W., Fundamental differences between Newtonian and non-Newtonian micro-EHL results: Journal of Tribology, Transactions of the ASME v. 117 no. 1 Jan 1995. p. 29-35.

Chang, T., Fu, L.P., Bacalzo, F.T., Gilliland, G.D., Wolford, D.J., ajaj, K.K., Antonelli, A., Chen, R., Klem, J., Hafich, M., Optical studies of heterointerfacial growth interrupts in type-IIGaAs/AlAs superlattices by time resolved photoluminescence imaging: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 4 Jul-Aug 1995. p. 1760-1765.

Chao, J., Zhou, G., Leu, M.C., Geskin, E., Characteristics of abrasive waterjet generated surfaces and effects of cutting parameters and structure vibration: Journal of Engineering for Industry, Transactions of the ASME v. 117 no.4 Nov 1995. p. 516-525.

Chao, Ping-Yi, Hwang, Yeong-Dong, Investigation of metal cutting experiments by using a Taguchi-based methodology: Proceedings of the National Science Council, Republic of China, PartA, Physical Science and Engineering v. 19 no. 4 Jul 1995. p. 295-308.

Chao, Wang, Huadong, Guo, Lin, Li, 'SRL-1 - CASSAR -ground' campaign and its results: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, 5CH35770. p. 970-972.

Chappert, C., Bruno, P., Bartenlian, B., Beauvillain, P., Bounouh, A., egy, R., Veillet, P., Magnetic anisotropy and interlayer exchange coupling inFe(110)/Au(111) ultrathin films: Journal of Magnetism and Magnetic Materials v. 148 no. 1-2 Jul 1 1995. p. 165-166.

Charriere, P., Craig, K.H., Seville, A., Ray-based, millimetre wave urban propagation tool: Propagation IEE Conference Publication v. 2 no. 407 1995. IEE, Stevenage, UK, p. 258-261.

Chawla, N., Holmes, J.W., Mansfield, J.F., Surface roughness characterization of Nicalon and HI-Nicalon ceramic fibers by atomic force microscopy: Materials Characterization v. 35 no. 4 Dec 1995. p. 199-206.

Chekina, O.G., An analysis of contacting the rough surfaces with full contact consideration: Trenie i Iznos v. 16 no. 1 Jan-Feb 1995. p. 205-212.

Chen, Chao-Chang A., Duffie, Neil A., Development of an automatic surface finishing system (ASFS) based on closed-loop surface topography control: International IEEE/IAS Conference on Industrial Automation and Control, Emerging Technologies, Proceedings 1995. IEEE, Piscataway, NJ, 5TH8070. p. 728-734.

Chen, Chonglin, Tsong, Tien T., Atomic roughness of steps of Ir(001) layers: Surface Science v. 336 no. 1-2 Aug 1 1995. p. L735-L740.

Chen, Haydn, Surface/interface x-ray diffraction: Materials Science Forum v. 189-190 1995. p. 95-106.

Chen, Jian, Gupta, Jiwan, Fuzzy logic model for automated decision making of pavement maintenance management: Computing in Civil Engineering (New York) v. 1 1995. ASCE, New York, p. 759-764.

Chen, K.S., Fung, Adrian K., Comparison of backscattering models for rough surfaces: IEEE Transactions on Geoscience and Remote Sensing v. 33 no. 1 Jan 1995.p. 195-200.

Chen, K.S., Huang, W.P., Tsay, D.H., Tzeng, Y.C., Investigations of soil moisture inversion from polarimetric radar responses based on integral equation model: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, 5CH35770. p. 1180-1182.

Chen, Ruimin, West, James C., Analysis of scattering from rough surfaces at large incidence angles using a periodic-surface moment method: IEEE Transactions on Geoscience and Remote Sensing v. 33 no. 5 Sep 1995.p. 1206-1213.

Chen, Shulin, Drennan, Douglas G.II, Malone, Ronald F., Impact of friction, flow rate and loading density on automated soft- shell crawfish separation, Aquacultural Engineering v. 14 no. 1 1995. p. 1-14.

Chen, X., Raja, J., and Simanapalli, S., Multi-scale of engineering surface: Int. Jour. Mach. Tools Manufact., v. 35, no. 2, p. 231-238, 1995.

Cheng, Huang Chung, Ueng, Shih Yuan, Wang, Ping Wei, Kang, Tzong Kuei, hao, Tien Sheng, Effects of postetching treatments on electrical characteristics of thermal oxides on reactive-ion-etched silicon substrates: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 9A Sep 1995. p. 5037-5042.

Cheng, Wangquan, Cheng, Herbert S., Semi-analytical modeling of crack initiation dominant contact fatiguelife for roller bearings: American Society of Mechanical Engineers (Paper) 1995. ASME, New York. 8pp 95-TRIB-53.

Chiarantini, L., Coppo, P., Gagliani, S., Luzi, G., Benvenuti, M., Experimental activities for hydrological studies in the Abruzzo region (Italy), prospects for soil moisture and surface roughness estimations by means of ERS1/SAR image analysis: International Geoscience and Remote Sensing Symposium (IGARSS) v. 1, 1995., 5CH35770. p. 233-235.

Chiba, Yuji, Ichimura, Hiroshi, Effect of surface roughness of substrates on residual stress of TiN coating: Nippon Seramikkusu Kyokai Gakujutsu Ronbunshi / Journal of the Ceramic Society of Japan, v. 103 Febr 1995. p. 162-166., [International Edition v. 103no. 2 Feb 1995. p. 163-167].

Chizhik, S.A., Gorbunov, V.V., Myshkin, N.K., Analysis of molecular scale roughness effect on contact of solids based on computer modeling: Precision Engineering v. 17 no. 3 Jul 1995. p. 186-191.

Cho, S.-J., Huh, Y.-H., Kawashima, N., Kuroyama, T., Ogawa, T., Effects of grinding conditions on flexural strength of Si//3N//4: Journal of Materials Science Letters v. 14 no. 16 Aug 15 1995. p. 1141-1143.

Choi, Kwang-Yeol, Lee, Chang Woo, Lee, Choochon, Substrate-dependent growth of polycrystalline silicon films prepared by plasma-enhanced chemical vapor deposition using SiF//4 and H//2 gases: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 9A Sep 1995. p. 4673-4676.

Choquette, Kent D., Shul, R.J., Howard, A.J., Rieger, D.J., Freund,.S., Wetzel, R.C., Smooth reactive ion etching of GaAs using a hydrogen plasma pretreatment: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 1 Jan-Feb 1995. p. 40-42.

Christenson, K.K., Smith, S.M., Effects of SC-1 dilution and temperature variations on etch rate and surface haze: Ultraclean Semiconductor Processing Technology and Surface Chemical Cleaning and Passivation, Materials Research Society Symposium Proceedings v. 386, 1995, p. 135-141.

Christiansen, Silke, Albrecht, M., Michler, H., Strunk, H.P., How surface roughening and dislocation formation mutually influence each other during heteroepitaxial growth: Strained Layer Epitaxy - Materials, Processing, and Device Applications, Materials Research Society Symposium Proceedings v. 379 1995.Pittsburgh, PA, p. 357-362.

Chung, Kee-Chiang, Experimental study on the effect of metallic-coated junctions on thermal contact conductance: JSME International Journal, Series B, Fluids and Thermal Engineeringv. 38 no. 1 Feb 1995. p. 100-107.

Chung, Kee-Chiang, Effect of surface deformations on thermal contact conductance of coated junctions: Journal of Thermophysics and Heat Transfer v. 9 no. 4 Oct-Dec 1995. p. 681-685.

Chung, Kee-Chiang, Sheffield, John W., Enhancement of thermal contact conductance of coated junctions: Journal of Thermophysics and Heat Transfer v. 9 no. 2 Apr-Jun 1995. p. 329-334.

Chung, Youngchul, Dagli, Nadir, Experimental and theoretical study of turning mirrors and beam splitters with optimized waveguide structures: Optical and Quantum Electronics v. 27 no. 5 May 1995. p. 395-403.

Churchill, Stuart W., Chan, Christina, Theoretically based correlating equations for the local characteristics of fully turbulent flow in round tubes and between parallel plates: Industrial & Engineering Chemistry Research v. 34 no. 4 Apr 1995. p. 1332-1341.

Clausen, Thomas, Leistiko, Otto, Surface roughness and specific contact resistance of AuGeNi/InP ohmic contacts: Evoluation of Thin Film and Surface Structure and Morphology, Materials Research Society Symposium Proceedings v. 355 1995. Pittsburgh, PA, p. 389-394.

Clausen, Thomas, Leistiko, Otto, Impact of the surface roughness on the electrical properties of AuGeNi/no.-InP ohmic contacts: Semiconductor Science and Technology v. 10 no. 5 May 1995. p. 691-697.

Claussen, Martin, Estimation of regional heat and moisture fluxes in homogeneous terrain with bluff roughness elements: Journal of Hydrology v. 166 no. 3-4 Apr 1995. p. 353-369.

Clem, P.G., Payne, D.A., Heteroepitaxy and waveguide formation for solution deposited LiNbO//3thin layers: Thin Films for Integrated Optics Applications, Materials Research Society Symposium Proceedings v. 392 1995. Pittsburgh, PA, p. 201-205.

Cohen, C., L'Hoir, A., Moulin, J., Schmaus, D., Sotto, M., Domange,.-L., Boulliard, J.-C., Study of atomic relaxations on clean and oxygen covered (100), (410) and (510) copper surfaces by channeling: Surface Science v. 339 no. 1-2 Sept 20 1995. p. 41-56.

Cohen, S.L., Rath, D., Lee, G., Furman, B., Pope, K.R., Tsai, R., yverson, W., Gow, C., Liehr, M., Studies of the relationship between megasonics, surface etching, and particle removal in SC-1 solutions: Ultraclean Semiconductor Processing Technology and Surface Chemical Cleaning and Passivation, Materials Research Society Symposium Proceedings v. 386, 1995. Pittsburgh, PA, p. 13-19.

Coker, Scott A., Shin, Yung C., In-process control of surface roughness with tool wear via ultrasonic sensing: Proceedings of the American Control Conference, v. 3, 1995., 5CH35736. p. 1717-1721.

Cokljat, D., Younis, B.A., Compound-channel flows, a parametric study using a Reynolds-stress transport closure: Journal of Hydraulic Research/ De Recherches Hydrauliques v. 33 no. 3, 1995. p. 307-320.

Collop, A.C., Cebon, D., Model of whole-life flexible pavement performance: Proceedings of the Institution of Mechanical Engineers, Part C,Journal of Mechanical Engineering Science v. 209 no. 6 1995. p. 389-407.

Colombini, Marco, Parker, Gary, Longitudinal streaks: Journal of Fluid Mechanics v. 304 Dec 10 1995. p. 161-183.

Connolly, Thom, Scanning interferometer characterizes surfaces: Laser Focus World v. 31 no. 8 Aug 1995. p. 85-87.

Cook, Robert, Production of hollow microspheres for inertial confinement fusion experiments: Hollow and Solid Spheres and Microspheres, Science and Technology Associated with their Fabrication and Application, Materials Research Society Symposium Proceedings v. 372, 1995., p. 101-112.

Copeland, Ronald R., Predicting roughness in concrete channels with bed load: International Water Resources Engineering Conference - Proceedings v.1 1995. ASCE, New York. p. 501-505.

Coppo, P., Luzi, G., Schiavon, G., Understanding microwave surface backscattering of bare soil by comparing models and experimental data collected during two different airborne campaigns: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, p. 1346-1348.

Coppo, P., Tarchi, D., Weinberger, M., Experimental model for surface scattering models validation at the European microwave signature laboratory: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, p. 930-932.

Cotta, M.A., Hamm, R.A., Chu, S.N.G., Hull, R., Harriott, L.R., emkin, H., Kinetic roughness in epitaxy (experimental): Materials Science & Engineering B, Solid-State Materials for Advanced Technology v. B30 no. 2-3 Mar 1995. p. 137-142.

Coulson, W., Leheup, E.R., Marsh, M.G., Reciprocating wear of WC-17Co coatings in aqueous environments: Transactions of the Institute of Metal Finishing v. 73 no. pt 1 Feb1995. p. 7-11.

Courboin, Daniel, Grouillet, Andre, Andre, Elie, Surface roughness of ion implanted <100> silicon studied by atomic force microscopy: Surface Science v. 342 no. 1-3 Nov 1995. p. L1111-L1115.

Critchlow, G.W., Brewis, D.M., Influence of surface macroroughness on the durability of epoxide- aluminium joints: International Journal of Adhesion and Adhesives v. 15 no. 3 Jul 1995. p. 173-176.

Cuerno, R., Barabasi, A.-L: Roughening by ion bombardment, a stochastic continuum equation: Fractal Aspects of Materials, Materials Research Society Symposium Proceedings v. 367 1995. Pittsburgh, PA, p. 299- 304.


## 1995 D-F


Da Fonseca, R.J.M., Saurel, J.M., Foucaran, A., Massone, E., aliercio, T., Camassel, J., Acoustic microscopy investigation of porous silicon: Thin Solid Films v. 255 no. 1-2 Jan 15 1995. p. 155-158.

Dabiran, A.M., Cohen, P.I., Surface reconstructions and growth mode transitions of AlAs(100): Journal of Crystal Growth v. 150 no. 1-4 pt 1 May 1 1995. p. 23-27.

Dahan, Reuben, Dror, Jacob, Inberg, A., Croitoru, Nathan I., Optical scattering of reflected and guided laser beam in hollow waveguides for infrared energy transmission: Proceedings of SPIE - The International Society for Optical Engineering v. 2426 1995. Bellingham, WA, p. 391-398.

Dahm, G., Rangelow, I.W., Hudek, P., Koops, H.W.P., Quartz etching for phase shifting masks: Microelectronic Engineering v. 27 no. 1-4 Feb 1995. p. 263-266.

Dai, Chang-Ming, Liu, Shun-Ho, Rough polysilicon film as a high-performance antireflective layer for sub-half-micron photolithography: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 12B Dec 1995. p. 6611-6614.

D'Almeida, J.R.M., Monteiro, S.N., Macromolecular network heterogeneity and crazing in thermosets: Journal of Materials Science Letters v. 14 no. 23 Dec 1 1995. p. 1649- 1652.

Dam, B., Rector, J., Chang, M.F., Kars, S., de Groot, D.G., Griessen, Laser ablation threshold of YBa//2Cu//3O//6// plus //x as revealed by using projection optics: Applied Surface Science v. 86 no. 1 Febr 1995. p. 13-17.

Dam, Henrik, Quist, Per, Schreiber, Mads Peter, Productivity, surface quality and tolerances in ultrasonic machining of ceramics: Journal of Materials Processing Technology v. 51 no. 1-4 Apr 1995. p. 358-368.

Darrort, V., Troyon, M., Ebothe, J., Bissieux, C., Nicollin, C., Quantitative study by atomic force microscopy and spectrophotometry of the roughness and brightness of electrodeposited nickel in the presence of additives: Thin Solid Films v. 265 no. 1-2 Sep 1 1995. p. 52-57.

Dauksher, W.J., Resnick, D.J., Cummings, K.D., Baker, J., Gregory,.B., Theodore, N.D., Chan, J.A., Johnson, W.A., Mogab, C.J., Nicolet, M.-A., eid, J.S., Method for fabricating a low stress x-ray mask using annealable amorphous refractory compounds: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 6 Nov-Dec 1995. p. 3103-3108.

de Haan, P., Rotach, M.W., Puff-particle dispersion model: International Journal of Environment and Pollution v. 5 no. 4-6 1995. p. 350-359.

de Jeu, Wim H., Shindler, Joseph D., Chandavarkar, Sumant, Geertman, ob M., Liang, Keng, On the (absence of) surface melting in biphenyl: Surface Science v. 342 no. 1-3 Nov 1995. p. 341-344.

De Wilde, W.P., Van Vinckenroy, G., Tirry, L., Cardon, A.H., Effects of the environment and curing on the strength of adhesive joints: Journal of Adhesion Science and Technology v. 9 no. 2 1995. p. 149-158.

de With, G., Sweegers, N., Effect of erosional wear on strength and residual stress during shaping of ceramic multilayer capacitors: Wear v. 188 no. 1-2 Sep 1995. p. 142-149.

DeBusk, Damon, Lagendijk, Andre, Porter, Cole, Investigating a trans-dichloroethylene vapor cleaning process: MICRO v. 13 no. 8 Sept 1995. p. 39-43.

Delen, Nuri, Fan, Regis, Hooker, R. Brian, Identifying requirements for end-face quality of polymer waveguides: Proceedings of SPIE - The International Society for Optical Engineering v. 2527 1995. Bellingham, WA, p. 360-369.

Denape, J., Masri, T., Petit, J.-A., Influence of surface roughness and oil ageing on various ceramic-steelcontacts under boundary lubrication: Proceedings of the Institution of Mechanical Engineers, Part J,Journal of Engineering Tribology v. 209 no. 3 1995. p. 173-182.

Deng, H., Hackam, R., Cherney, E.A., Role of the size of particles of alumina trihydrate filler on the life of RTV silicone rubber coating: IEEE Transactions on Power Delivery v. 10 no. 2 Apr 1995. p. 1012-1023.

Derbyshire, B., Fisher, J., Dowson, D., Hardaker, C.S., Brummitt, K., Wear of UHMWPE sliding against untreated, titanium nitride-coated and 'Hardcor'-treated stainless steel counterfaces: Wear v. 181-183 no. 1 Feb 1995. p. 258-262.

Deuis, R.L., Subramanian, C., Yellup, J.M., Strafford, K.N., Arora, Study of electroless nickel plating of ceramic particles: Scripta Metallurgica et Materialia v. 33 no. 8 Oct 15 1995. p. 1217-1224.

Deutscher, Oswald, Verschiedene Verfahren zur Einstellung einer gezielten Rauheit von Kaltband (different methods for attaining a particular roughness on cold-rolled strip): Stahl und Eisen no. 7 July 17 1995. p. 39-45.

Di Pietro, P., Yao, Y.L., New technique to characterize and predict laser cut striations: International Journal of Machine Tools & Manufacture v. 35 no. 7 Jul1995. p. 993-1002.

Diak, George R., Rabin, Robert M., Gallo, Kevin P., Neale, hristopher M., Regional-scale comparisons of vegetation and soil wetness with surface energy budget properties from satellite and in-situ observations: Remote Sensing Reviews v. 12 no. 3-4 1995. p. 355-382.

Diao, Chien Chen, Oya, Gin-ichiro, Growth of SrTiO//x buffer layers and their effect on surface flatness of YBa//2Cu//3O//7// minus // delta films on SrTiO//3(110) substrates: Japanese Journal of Applied Physics, Part 2, Letters v. 34 no. 10B Oct15 1995. p. L1372-L1374.

Dietz, N., Miller, A., Kelliher, J.T., Venables, D., Bachmann, K.J., Migration-enhanced pulsed chemical beam epitaxy of GaP on Si(001): Journal of Crystal Growth v. 150 no. 1-4 pt 1 May 1 1995. p. 691-695.

Dilsiz, N., Erinc, N.K., Bayramli, E., Akovali, G., Surface energy and mechanical properties of plasma-modified carbon fibers: Carbon v. 33 no. 6 1995. p. 853-858.

Dmitruk, N.L., Goncharenko, A.V., Gorea, O.S., Romaniuk, V.R., atarinskaya, O.M., Venger, E.F., Far-infrared spectroscopy of phonons in long-period GaAs/GaP//xAs//1//minus //x superlattices: Proceedings of the International Semiconductor Conference, CAS 1995.IEEE, Piscataway, NJ. p. 95-98.

Doege, E., Laackman, B., Kischnick, B., Fractal geometry used for the characterization of sheet surfaces: CIRP Annals - Manufacturing Technology v. 44 no. 1 1995. p. 197-200.

Doege, Eckart, Laackman, Benedikt, Kischnick, Bernd, Characterisation of technical surfaces by means of fractal geometry: Steel Research v. 66 no. 3 Mar 1995. p. 113-116.

Dohda, Kuniaki, Wang, Zhrgang, Yokoi, Nobuyasu, Haruyama, Yoshio, Effects of surface roughness of workpiece on friction behavior in metal forming: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 591 Nov 1995. p. 4476-4483.

Dong, W.P., and Stout, K.J., An integrated approach to the characterization of surface wear, I—qualitative characteristics: Wear, v. 181-183, no. II, p. 700-716, (1995).

Dong, W.P., Stout, K.J., Two-dimensional fast Fourier transform and power spectrum for surface roughness in three dimensions: Proceedings of the Institution of Mechanical Engineers, Part B, Journal of Engineering Manufacture v. 209 no. B5 1995. p. 381-391.

Donnet, Jean-Baptiste, Wang, Tong-Kuan, Surface organisation of carbon black and its implication on rubber reinforcement: Progress in Rubber and Plastics Technology v. 11 no. 4 1995. p. 261-267.

Donovan, Mark J., Bogy, D.B., Experimentally observed roughness effects on the air bearing in the pseudo-contact spacing regime: IEEE Transactions on Magnetics v. 31 no. 6 pt 1 Nov 1995. p. 2994-2996.

Drozd, M.S., Certain regularities of elastic sphere force contact with the elastoplastic half-space: Trenie i Iznos v. 16 no. 2 Mar-Apr 1995. p. 218-226.

Du, Xin Min, Orignac, Xavier, Almeida, Rui M., Striation-free, spin-coated sol-gel optical films: Journal of the American Ceramic Society v. 78 no. 8 Aug 1995. p. 2254- 2256.

Dubois, Pascale C., van Zyl, Jakob, Engman, Ted, Measuring soil moisture with imaging radars: IEEE Transactions on Geoscience and Remote Sensing v. 33 no. 4 Jul 1995.p. 915-926.

Dudarev, S.L., Vvedensky, D.D., Whelan, M.J., Dynamical electron scattering from growing surfaces: Surface Science v. 324 no. 1 Feb 1 1995. p. L355-L361.

Dunn, D.S., Sridhar, N., Cragnolino, G.A., Effects of surface chromium depletion on localized corrosion of alloy 825 as a high-level nuclear waste container material: Corrosion (Houston) v. 51 no. 8 Aug 1995. p. 618-624.

Duszak, R., Ohtani, F., Kadowaki, Y., Nozoye, H., Quantitative determination of the imperfectness of a cleaved MoS//2(001) surface by coaxial impact-collision ion scattering: Surface Science v. 324 no. 2-3 Feb 10 1995. p. 257-262.

Dutta, Achyut Kumar, Vertical etching of thick SiO//2 using C//2F//6-based reactive ion beam etching: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 4 Jul-Aug 1995. p. 1456-1459.

Dutta, Achyut Kumar, Side wall roughness reduction in deep silicon oxide etching using C//2F//6 based ECR-RIBE: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 1 Jan 1995. p. 365-369.

Dutta, J., Bhattacharyya, D., Maiti, A.B., Chaudhuri, S., Pal, A.K., Studies of the grain boundary effect in electrodeposited cadmium telluride films from optical measurements: Vacuum v. 46 no. 1 Jan 1995. p. 17-21.


# 1995 E-G


Eberhardt, Alan W., Kim, Byeong S., Rigney, E. Douglas, Kutner, erald L., Harte, Charles R., Effects of precoating surface treatments on fatigue of Ti-6Al-4V: Journal of Applied Biomaterials v. 6 no. 3 Fall 1995. p. 171-174.

Edwards, D.M., Erickson, R.P., Mathon, J., Muniz, R.B., Villeret, M., Spin current and exchange coupling in magnetic multilayers: Materials Science & Engineering B, Solid-State Materials for Advanced Technology v. B31 no. 1-2 Apr 1995. p. 25-30.

Eftekhari, A., Talia, J.E., Mazumdar, P.K., Influence of surface condition on the fatigue of an aluminum-lithium alloy (2090-T3): Materials Science & Engineering A, Structural Materials, Properties, Microstructure and Processing v. A199 no. 2 Aug 15 1995. p. L3-L6.

Eisenmenger-Sittner, C., Bangert, H., Bergauer, A., Bauer, W., Dynamic surface evolution of sputtered Cu-coatings, a quantification of surface diffusion effects by AFM: Evoluation of Thin Film and Surface Structure and Morphology, Materials Research Society Symposium Proceedings v. 355. 1995, p. 395-400.

Eisenmenger-Sittner, C., Behr, R., Bergauer, A., Hejl, A., Bauer, W., Multilayer approach to the design of fine dispersed metallic two-component materials: Structure and Properties of Multilayered Thin Films, Materials Research Society Symposium Proceedings v. 382 1995, p. 141-146.

El-Shenawee, M., Bahar, E., Double scatter radar cross sections for two dimensional random rough surfaces-high frequency approximation: IEEE Antennas and Propagation Society, AP-S International Symposium(Digest) v. 4 1995. IEEE, Piscataway, NJ, 5CH35814. p. 1724-1727.

Elson, J. Merle, Bennett, Jean M., Calculation of the power spectral density from surface profile data: Applied Optics v. 34 no. 1 Jan 1 1995. p. 201-208.

Epler, J.E., Evolution of surface topography during metallorganic vapor phase epitaxy of Al//xGa//1// minus //xAs (0 less than equivalent to x less than equivalent to 1): Physica Status Solidi (A) Applied Research v. 152 no. 1 Nov 1995. p. 103- 111.

Eriksson, Inger, Lunabba, Palvi, Pettersson, Annika, Carlsson, ilbert, Recycling potential of printed the rmomechanical fibres for newsprint: Research Forum on Recycling, Proceedings 1995. Canadian Pulp & Paper Assoc, Montreal, Que,. p. 163-169.

Erko, A., Schaefers, F., Vidal, B., Yakshin, A., Pietsch, U., Mahler, X-ray supermirrors for BESSY II: Review of Scientific Instruments v. 66 no. 10 Oct 1995. p. 4845-4846.

Ernst, V.G.S., Sablik, P.W., Balendonck, J., Houkes, Z., Regtien,.P.L., Surface relief meter based on trinocular vision: IEE Conference Publication no. 410 1995. IEE, Stevenage, UK, p. 281- 285.

Ertas, Deniz, Kardar, Mehran, Critical dynamics of contact line depinning: Dynamics in Small Confining Systems II, Materials Research Society Symposium Proceedings v. 366 1995. Pittsburgh, PA,. p. 51-56.

Escobar-Jaramillo, Enrique F., Additive ep-condition and the critical scuffing limit for rolling- sliding: American Society of Mechanical Engineers (Paper) 1995. ASME, New York. 7pp 95-TRIB-4.

Evans-Lutterodt, K.W., Tang, Mau-Tsu, Spectral sensitivities of x-ray diffraction and atomic force microscopy to the roughness of Si/SiO//2 interfaces: Evoluation of Thin Film and Surface Structure and Morphology, Materials Research Society Symposium Proceedings v. 355 1995. p. 373-376.

Everaert, Emmanuel P., Van Der Mei, Henny C., De Vries, Joop, usscher, Henk J., Hydrophobic recovery of repeatedly plasma-treated silicone rubber.Part 1. Storage in air: Journal of Adhesion Science and Technology v. 9 no. 9 1995. p. 1263-1278.

Extrand, Charles W., Kumagai, Y., Liquid drops on an inclined plane, the relation between contact angles, drop shape, and retentive force: Journal of Colloid and Interface Science v. 170 no. 2 Mar 15 1995. p. 515- 521.

Family, Fereydoon, Meakin, Paul, Sapoval, Bernard, and Wool, Richard (eds.), Proceedings of the 1994 MRS Fall Meeting: Fractal Aspects of Materials, Materials Research Society Symposium Proceedings v. 367 1995, 528p.

Fan, Shanhui, Villeneuve, Pierre R., Joannopoulos, J.D., Theoretical investigation of fabrication-related disorder on the properties of photonic crystals: Journal of Applied Physics v. 78 no. 3 Aug 1 1995. p. 1415-1418.

Fan, Yong, Holditch, S.A., Effects of wall slip and shear-induced transition on the viscosity measurements of crosslinked fracturing fluids: Proceedings - SPE Eastern Regional Conference and Exhibition 1995.Society of Petroleum Engineers (SPE), Richardson, TX, p. 101-110 SPE 30987.

Fang, K., Adame, R., Yang, H.-N., Wang, G.-C., Lu, T.-M., Measurement of roughness exponent for scale-invariant rough surfaces using angle resolved light scattering: Applied Physics Letters v. 66 no. 16 Apr 17 1995. p. 2077-2079.

Farnum, Gregory: Surface measurement, more than meets the eye, Abrasives Apr-May 1995. p. 13-15.

Feenstra, R.M., Lutz, M.A., Copel, M., Roughness analysis of Si//1// minus //xGe//x films: Evoluation of Thin Film and Surface Structure and Morphology, Materials Research Society Symposium Proceedings v. 355 1995. Pittsburgh, PA, p. 301-310.

Feenstra, R.M., Lutz, M.A., Stem, Frank, Ismail, K., Mooney, P.M., eGoues, F.K., Stanis, C., Chu, J.O., Meyerson, B.S., Roughness analysis of Si/SiGe heterostructures: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 4 Jul-Aug 1995. p. 1608-1612.

Fekpe, Edward, Attoh-Okine, Nii O., Deterioration modelling for lateritic-base flexible pavements: Construction and Building Materials v. 9 no. 3 Jun 1995. p. 159-163.

Feng, Z.D., Rho, J.Y., Ziv, I., Mode II fracture toughness of cortical bone - a comparison of longitudinal and transverse crack propagation: American Society of Mechanical Engineers, Bioengineering Division(Publication) BED v. 29 1995. ASME, New York. p. 419-420.

Fischer, H.M., Fischer, H.E., Bessiere, M., Bobo, J.-F., Lenoble, O., ndrieu, S., Piecuch, M., Specular and off-specular x-ray scattering as quantitative structural probes of multilayers. Application to MN/IR(111) superlattices: Structure and Properties of Multilayered Thin Films, Materials Research Society Symposium Proceedings v. 382 1995, p. 339-344.

Fisher, J., Firkins, P., Reeves, E.A., Hailey, J.L., Isaac, G.H., Influence of scratches to metallic counterfaces on the wear of ultra-high molecular weight polyethylene: Proceedings of the Institution of Mechanical Engineers, Part H,Journal of Engineering in Medicine v. 209 no. 4 1995. p. 263-264.

Fitch, Jon T., Hegde, Rama I., Beinglass, Israel, Venkatesan, Mali, Morphology and step coverage of in-situ doped polysilicon films deposited by single wafer CVD: Evoluation of Thin Film and Surface Structure and Morphology, Materials Research Society Symposium Proceedings v. 355 1995. Pittsburgh, PA, p. 89-94.

Flay, R.G.J., Vickery, B.J., Aerodynamic properties of a roughened cone: Restructuring, America and Beyond Structures Congrees - Proceedings v.1 1995. ASCE, New York. p. 361-364.

Fletcher, J.G., West, A.R., Irvine, J.T.S., AC impedance response of the physical interface between yttria- stabilized zirconia and YBa//2Cu//3O//7// minus //x: Journal of the Electrochemical Society v. 142 no. 8 Aug 1995. p. 2650- 2654.

Fork, D.K., Armani-Leplingard, F., Kingston, J.J., Optical losses in ferroelectric oxide thin films, Is there light at the end of the tunnel?: Ferroelectric Thin Films IV, Materials Research Society Symposium Proceedings, v. 361 1995. Pittsburgh, PA, p. 155- 166.

Fouilland-Paille, L., Gerland, M., Violan, P., Cyclic behaviour of a 316L stainless steel hardened by an explosive treatment: Materials Science & Engineering A, Structural Materials, Properties, Microstructure and Processing v. A201 no. 1-2 Oct 1995. p. 32-39.

Fourche, Georges: Overview of the basic aspects of polymer adhesion. Part II, application to surface treatments, Polymer Engineering and Science v. 35 no. 12 Jun 1995. p. 968-975.

Fourmigue, J.M., Noel, M., Riquel, G., Aging of polymeric housing for HV insulators comparison between natural and artificial testing: Conference on Electrical Insulation and Dielectric Phenomena (CEIDP), nnual Report 1995. IEEE, Piscataway, NJ, 95CH35842. p. 404-407.

Freni, A., Scattering from a periodic inhomogeneous medium with a rough interface: Microwave and Optical Technology Letters v. 8 no. 2 Feb 5 1995. p. 111- 114.

Frerichs, H., Stricker, J., Wesner, D.A., Kreutz, E.W., Laser-induced surface modification and metallization of polymers: Applied Surface Science v. 86 no. 1 Febr 1995. p. 405-410.

Freund, L.B., Evolution of waviness on the surface of a strained elastic solid dueto stress-driven diffusion: International Journal of Solids and Structures v. 32 no. 6-7 Mar-Apr 1995. p. 911-923.

Friedbacher, Gernot, Bouveresse, Eric, Fuchs, Gemot, Grasserbauer, anfred, Schwarzbach, Daniel, Haubner, Roland, Lux, Benno, Pretreatment of silicon substrates for CVD diamond deposition studied by atomic force microscopy: Applied Surface Science v. 84 no. 2 Feb 1 1995. p. 133-143.

Fries, Thomas, Neue Dimensionen, Scanning force microscopy, roughness measuring - new aspects of rating: Materialpruefung v. 37 no. 5 May 1995. p. 160-163.

Fuh, Kuang-Hua, Wu, Chih-Fu, Proposed statistical model for surface quality prediction in end- milling of Al alloy: International Journal of Machine Tools & Manufacture v. 35 no. 8 Aug1995. p. 1187-1200.

Fukuda, Toshio, Adachi, Yuji, Hoshino, Haruo, Kosuge, Kazuhiro, Muro, iji, Matsunaga, Isao, Arai, Fumihito, Omnidirectional walking mechanism (2nd report, inclination control while walking on rough terrain): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 589 Sep 1995. p. 3620-3626.

Fung, A.K., Bredow, J.W., Gogineni, P., Investigation of scattering mechanisms from snow covered ice: International Geoscience and Remote Sensing Symposium (IGARSS) v. 1, 1995., 5CH35770. p. 407-409.

Fung, A.K., Chen, K.S., Validation of the IEM surface scattering model: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, 5CH35770. p. 933-935.

Furuyama, Tsutomu, Sasaki, Naoe, Shibue, Kazuhisa, Machinability of reactively sintered Ti-43.4 at %Al-1.6 at % Mn intermetallics: Keikinzoku/Journal of Japan Institute of Light Metals v. 45 no. 3 Mar1995. p. 138-143.

Gamiz, Victor L., Payne, Don M., Dymale, Raymond C., Bowen, Gault S., tone, David H., Relocatable array interferometer, imaging of laser-illuminated space targets: Proceedings of SPIE - The International Society for Optical Engineering v. 2566 1995. Bellingham, WA, p. 241-252.

Ganesh Sundara Raman, S., Padmanabhan, K.A., Effect of electropolishing on the room-temperature low-cycle fatigue behaviour of AISI 304LN stainless steel: International Journal of Fatigue v. 17 no. 3 Apr 1995. p. 179-182.

Ganti, Suryaprakash, and Bhushan, Bharat, Generalized fractal analysis and its applications to engineering surfaces: Wear v. 180 no. 1-2 Jan 1995. p. 17-34.

Gao, Chao, and Bhushan, Bharat, Tribological performance of magnetic thin-film glass disks, its relation to surface roughness and lubricant structure and its thickness: Wear v. 190 no. 1 Nov 1995. p. 60-75.

Gao, L.J., Anderson, G.W., Esposto, F., Norton, P.R., Mason, B.F., u, Z.-H., Graham, M.J., Surface topography and composition of InP(100) after various sulfur passivation treatments: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 5 Sep-Oct 1995. p. 2053-2056.

Garcia, B.J., Fontaine, C., Yague, A. Munoz: GaAs growth on (111)B substrates by molecular-beam epitaxy, a study of the first stages of growth on ultraviolet-ozone prepared surfaces: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 2 Mar-Apr 1995. p. 281-286.

Garcia, N., Serena, P.A., Quantum effects on the step interaction energy and the equilibrium shape of crystals: Surface Science v. 330 no. 1 Jun 1 1995. p. L665-L667.

Garimella, S.V., Schlitz, D.J., Heat transfer enhancement in narrow channels using two and three- dimensional mixing devices: Journal of Heat Transfer, Transactions ASME v. 117 no. 3 Aug 1995. p. 590- 596.

Gauthier, Y., Baudoing-Savois, R., Rundgren, J., Hammar, M., othelid, M., Reconstruction of the Pt//5//0Ni//5//0(100) surface, a LEED and STM study: Surface Science v. 327 no. 1-2 Apr 1 1995. p. 100-120.

Gavrilyuk, B.V., Koshkina, O.V., Magnetostatic coupling in multilayered films: Journal of Magnetism and Magnetic Materials v. 148 no. 1-2 Jul 1 1995. p. 216-217.

Gea, Laurence, Loubet, Jean-Luc, Brenier, Roger, Thevenard, Paul, Relationship between stress and surface roughness in krypton implanted MgO: Thin Films, Stresses and Mechanical Properties V, Materials Research Society Symposium Proceedings v. 356 1995. Pittsburgh, PA, p. 57-62.

Gellrich, R., Kunz, A., Beckmann, G., Broszeit, E., Theoretical and practical aspects of the wear of vane pumps- part A.Adaptation of a model for predictive wear calculation: Wear v. 181-183 no. 2 Mar 1995. p. 862-867.

Gemperline, Mark C., Siller, Thomas J., Impact factors for estimating vehicle live loads: International Conference on Advances in Underground Pipeline Engineering - Proceedings 1995. ASCE, New York. p. 194-204.

Gerardi, Tony, Schmerl, Harry, Ride quality as a part of airport pavement management systems: Transportation Congress, Proceedings v. 1 1995. ASCE, New York, p. 588-599.

Gerasimov, E.B., Shchelykalov, Yu. Ya., Investigation of the method of intensifying heat transfer on the surface of dielectrics: Elektrotekhnika no. 2 Feb 1995. p. 37-40.

Ghosh, Amitava, Hsiung, Sui-Min, On characterization of self-affine fractal profiles: Proceedings of Engineering Mechanics v. 1 1995. ASCE, New York,. p. 179-182.

Gibbs, J.T., Bishop, P.L., Method for describing biofilm surface roughness using geostatistical techniques: Water Science and Technology v. 32 no. 8 1995. p. 91-98.

Giesen, Margret, Schmitz, F., Ibach, H., Growth of cobalt films on vicinal copper surfaces: Surface Science v. 336 no. 3 Aug 10 1995. p. 269-279.

Glaeser, William A., Erickson, Richard C., Dufrane, Keith F., Kannel, errold W., Tribology, the science of combatting wear: Lubrication Engineering v. 51 no. 2 Feb 1995. p. 135-138.

Globus, M.E., Grinyov, B.V., Calculations of scintillators for radiation detector systems,dependence of spectrometric characteristics on shape, size and reflector type: IEEE Transactions on Nuclear Science v. 42 no. 4 pt 1 Aug 1995. p. 357- 360.

Goertz, W., Kempf, B., Kretz, J., Resolution enhanced scanning force microscopy measurements for characterizing dry etching methods applied to titanium masked InP: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 1 Jan-Feb 1995. p. 34-39.

Gogineni, S., Jezek, K., Ultra-wideband radar measurements over bare and snow-covered saline ice: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, p. 859-861.

Gogolides, E., Grigoropoulos, S., Nassiopoulos, A.G., Highly anisotropic room-temperature sub-half-micron Si reactive ion etching using fluorine only containing gases: Microelectronic Engineering v. 27 no. 1-4 Feb 1995. p. 449-452.

Golan, Yuval, Margulis, Lev, Matlis, Sophie, Rubinstein, Israel, Vacuum-deposited gold films II. Role of the crystallographic orientation of oxide-covered silicon substrates: Journal of the Electrochemical Society v. 142 no. 5 May 1995. p. 1629-1633.

Golis, Bogdan, Pilarczyk, Jan W., Filipczyk, Eugeniusz, New method of mechanical descaling of carbon steel wire rods: Proceedings of the Annual Convention of the Wire Association International 1995. Wire Assoc Int Inc, Guilford, CT, p. 112-118.

Golriz, Mohammad R., Experimental correlation for temperature distribution at the membrane wall of CFB boilers: Proceedings of the International Conference on Fluidized Bed Combustion v. 1 1995. ASME, New York. p. 499-505.

Goniakowski, J., Noguera, C., Atomic and electronic structure of steps and kinks on MgO(100) and MgO(110): Surface Science v. 340 no. 3 Oct 20 1995. p. 191-204.

Gorbunov, S.V., Procedure for pricing of commercial products of Orsk-Khalilov Integrated Iron and Steel Works: Stal' no. 10 Oct 1995. p. 74.

Goryacheva, Irina, Sadeghi, Farshid, Nickel, David A., Internal stresses in contact of a rough body and a viscoelastic layered semi-infinite plane: American Society of Mechanical Engineers (Paper) 1995. ASME, New York. 6pp 95-TRIB-5.

Goto, Shigeo, Yamada, Masamichi, Nomura, Yasuhiko, Surface cleaning of Si-doped/undoped GaAs substrates: Japanese Journal of Applied Physics, Part 2, Letters v. 34 no. 9B Sep 15, 1995. p. L1180-L1183.

Goto, Shuichi, Kanda, Yukinari, Sugimoto, Kohichi, Kobayashi, itsuyuki, Effect of grinding on bending fracture strength of WC-Co alloy: Nippon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan Society of Mechanical Engineers, Part A v. 61 no. 589 Sep 1995. p. 1927-1932.

Gotovskij, M.A., Intensification of convective heat transfer and self-arrangement of whirl structures: Teploenergetika no. 3 Mar 1995. p. 55-60.

Gregersen, Oyvind W., Helle, Torbjorn, Norling, Anders: Effects on paper by wet pressing against a thin, elastic rubber blanket: International Paper Physics Conference, Proceedings 1995. p. P17-P19.

Griesche, J., Hoffmann, N., Rabe, M., Jacobs, K., On the mechanism of RHEED oscillations in molecular beam epitaxy of II-VI compounds: Materials Science Forum v. 182-184 1995. p. 155-158.

Grigo, A., Badt, D., Wengelnik, H., Neddermeyer, H., Formation of the H-induced pairing-row reconstruction of Ni(110) at low temperature: Surface Science v. 331-333 no. pt B Jul 1 1995. p. 1077-1081.

Gronostajski, Jerzy, Zimniak, Zbigniew, Few methods of analytical calculation of forming-limit curves: Journal of Materials Processing Technology v. 55 no. 3-4 Dec 1995. p. 213-217.

Grosse, F., Zimmermann, R., Growth simulation of ternary quantum structures and their optical properties: Superlattices and Microstructures v. 17 no. 4 1995. p. 439-444.

Gruen, Dieter M., Zuiker, Christopher D., Krauss, Alan R., Diamond films grown from fullerene precursors: Proceedings of SPIE - The International Society for Optical Engineering v. 2530 1995. Bellingham, WA, p. 2-13.

Gu, Ping, Pascual, R., Shirkhanzadeh, M., Saimoto, S., Scott, J.D., Influence of intermetallic precipitates on the adhesion of electrodeposited zinc to aluminum cathodes: Hydrometallurgy v. 37 no. 3 Apr 1995. p. 283-300.

Gu, Q.J., Ma, Z.L., Liu, N., Ge, X., Zhao, W.B., Xue, Z.Q., Pang,.J., Hua, Z.Y., Investigation of atom-resolved domain boundaries on Si(111)7 X 7 surfaces by scanning tunneling microscopy: Surface Science v. 327 no. 3 Apr 10 1995. p. 241-247.

Gu, Yousong, Chai, Weiping, Xu, Shifa, Mai, Zhenhong, Dong, Cheng, ian, Yongjun, Chen, Hong, Li, Lin, Surface structural study of YBa//2Cu//3O//7// minus // delta thin films grown by pulsed laser ablation: Journal of Materials Science Letters v. 14 no. 2 Jan 15 1995. p. 91-93.

Guerin, L., Schaer, M.A., Sachot, R., Dutoit, M., Proposal for new multichip-on-silicon packaging scheme: International Conference on Solid-State Sensors and Actuators, and Eurosensors IX, Proceedings v. 1 1995. IEEE, Piscataway, NJ. p. 252-255.

Guilinger, T.R., Kelly, M.J., Chason, E.H., Headley, T.J., Howard,.J., Nondestructive measurement of porous silicon thickness using x-ray reflectivity: Journal of the Electrochemical Society v. 142 no. 5 May 1995. p. 1634- 1636.

Gutjahr, K., Reiche, M., Goesele, U., Contamination and cleaning of GaAs-(100) surfaces: Materials Science Forum v. 196-201 no. pt 4, 1995. p. 1967-1972.

Gutman, E.J., Hartmann, G.C., Conductive properties of two-component xerographic developer materials: Proceedings of the IS&T's International Congress on Avances in Non- Impact Printing Technologies 1995. Soc Imaging Sci Technol, Springfield, VA,. p. 121-124.

Gutman, E.J., Hartmann, G.C., Role of the electric field in triboelectric charging of two-component xerographic developers: Journal of Imaging Science and Technology v. 39 no. 4 Jul-Aug 1995. p. 285-294.

# 1995 H-J

Ha, Jeong Sook, Kim, Sung-Bock, Park, Seong-Ju, Lee, El-Hang, Surface morphology of (NH//4)//2S//x-treated GaAs(100) investigated by scanning tunneling microscopy: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 2B Feb 1995. p. 1123-1126.

Habuka, Hitoshi, Tsunoda, Hitoshi, Mayusumi, Masanori, Tate, Naoto, atayama, Masatake, Roughness of silicon surface heated in hydrogen ambient: Journal of the Electrochemical Society, v. 142 no. 9 Sept 1995. p. 3092- 3098.

Halepete, Sameer D., Lin, H.C., Fang, Simon J., Helms, C.R., Analyzing atomic force micrographs using spectral methods: Ultraclean Semiconductor Processing Technology and Surface Chemical Cleaning and Passivation, Materials Research Society Symposium Proceedings v. 386, 1995. Pittsburgh, PA, p. 383-388.

Hall, I.W., Manrique, F., Surface treatment of carbon fibers for aluminum alloy matrix composites: Scripta Metallurgica et Materialia v. 33 no. 12 Dec 15 1995. p. 2037-2043.

Hall, P., Davies, S., Direction-invariance of fractal dimension on a surface: Applied Physics A, Materials Science & Processing v. 60 no. 3 Mar 1995.p. 271-274.

Hallab, Nadim J., Bundy, Kirk J., O'Connor, Kim, Clark, Russell, oses, Randy L., Cell adhesion of biomaterials, correlations between surface charge, surface roughness, adsorbed protein, and cell morphology: Journal of Long-Term Effects of Medical Implants v. 5 no. 3 1995. p. 209- 231.

Halling, J., Retired lecturer's presentation of the theory of friction first presented by Bowden and Tabor: Tribology International v. 28 no. 1 1995. p. 29-32.

Hamaishi, Kazuto, Sueyoshi, Hidekazu, Kiyofuji, Jun-ichi, Nakamura, uzo, Effect of mechanical pre-treatment on gas nitriding behavior in austenitic stainless steels: Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals v.59 no. 2 Feb 1995. p. 133-139.

Hamouine, Abdelmadjid, Lorrain, Michel, Etude de la resistance a l'arrachement de barres enrobees dans dubeton de hautes performances, Pull-out strength of bars embedded in high performance concrete: Materials and Structures/Materiaux et Constructions v. 28 no. 184, Dec1995, p. 569-574.

Hansen, J. Lundsgaard, Shiryaev, S.Yu., Thomsen, E.V., Improvement of the morphological quality of the Si surface using an optimized in-situ oxide removal procedure prior to MBE growth: Journal of Crystal Growth v. 157 no. 1-4 Dec 2 1995. p. 317-322.

Harvey, James E., Kotha, Anita, Scattering effects from residual optical fabrication errors: Proceedings of SPIE - The International Society for Optical Engineering v. 2576 1995. Bellingham, WA, p. 155-174.

Hashimoto, Munetoh, Shiratori, Masaki, Ito, Masaki, Hirai, Kiyokazu, Effects of shot peening on fatigue strength of austempered ductile iron: Nippon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan Society of Mechanical Engineers, Part A v. 61 no. 585 May 1995. p. 889-893.

Hauser, M., Baur, M., Wirner, C., Gornik, E., Bohm, G., Weimann, G., Investigation of the mobility and the drift velocity in a one-dimensional quantum wire: Proceedings of the 8th International Conference on Hot Carriers in Semiconductors (HCIS-8) Oxford, UK. no date (ca. mid-'90s?).

Hearn, Chester, Maddox, William, Kim, Youngmin, Gupta, Vikas, Masser, avid, Koeneman, Paul, Chu, Chin Seng, Busch-Vishniac, Ilene, Neikirk, Dean, eldon, William, Wood, Kristin, Smart mechanical bearings using MEMS technology: Tribology Symposium 1995 American Society of Mechanical Engineers, Petroleum Division, PD v. 72 1995. ASME, New York. p. 1-10.

Hedde, T., Guffond, D., ONERA three-dimensional icing model: AIAA Journal v. 33 no. 6 Jun 1995. p. 1038-1045.

Hegde, Rama I., Paulson, Wayne M., Tobin, Philip J., Surface topography of phosphorus doped polysilicon: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 4 Jul-Aug 1995. p. 1434-1441.

Hegeman, Petra E., Zandvliet, Harold J.W., Kip, Gerard A.M., Kersten, art A.G., Poelsema, Bene, Experimental investigation of criteria for thermal roughening: Surface Science v. 331-333 no. pt B Jul 1 1995. p. 1110-1114.

Heidger, S.L., Friction and wear of amorphous hydrogenated carbon: Mechanical Behavior of Diamond and Other Forms of Carbon, Materials Research Society Symposium Proceedings v. 383 1995, p. 319-326.

Helbing, R., Birecki, H., DiCarolis, S.A., Feigelson, R.S., Hiskes, Growth of CaS thin films by solid source metalorganic chemical vapor deposition: Journal of Crystal Growth v. 146 no. 1-4 Jan 1 1995. p. 599-603.

Helmis, C.G., Papadopoulos, K.H., Asimakopoulos, D.N., Papageorgas,.G., Soilemes, A.T., Experimental study of the near-wake structure of a wind turbine operating over complex terrain: Solar Energy v. 54 no. 6 Jun 1995. p. 413-428.

Hennessy, M., Barber, G.C., Effects of cylinder wall surface roughness and bore distortion on blow- by in automotive engines: Tribology Transactions v. 38 no. 4 Oct 1995. p. 966-972.

Henry, Robert C., Hansman, R. John Jr., Breuer, Kenneth S., Heat transfer variation on protuberances and surface roughness elements: Journal of Thermophysics and Heat Transfer v. 9 no. 1 Jan-Mar 1995. p. 175-180.

Hess, Daniel P., Wagh, Nitish J., Evaluating surface roughness from contact vibrations: Journal of Tribology, Transactions of the ASME v. 117 no. 1 Jan 1995. p. 60-64.

Hey, R., Wassermeier, M., Behrend, J., Daeweritz, L., Ploog, K., aidt, H., Morphological instabilities on exactly oriented and on vicinal GaAs(001) surfaces during molecular beam epitaxy: Journal of Crystal Growth v. 154 no. 1-2 Sept 1 1995. p. 1-9.

Hirata, Osamu, Nakajima, Akira, Okada, Ken, Sasaki, Shinji, Study on seal performance of globe valve with conical seat: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 584 Apr 1995. p. 1618-1625.

Hirschorn, E.S., Lin, D.S., Hansen, E.D., Chiang, T.-C., Atomic burrowing and hole formation for Au growth on Ag(110): Surface Science v. 323 no. 3 Jan 20 1995. p. L299-L304.

Hocheng, H., Hsu, C.C., Preliminary study of ultrasonic drilling of fiber-reinforced plastics: Journal of Materials Processing Technology v. 48 no. 1-4 Jan 15 1995. p. 255-266.

Hocheng, H., Tsai, H.Y., Shiue, J.J., Wang, B., Feasibility study of abrasive-waterjet milling of fiber-reinforced plastics: Machining of Advanced Materials American Society of Mechanical Engineers, Applied Mechanics Division, AMD v. 208 1995. ASME, New York.p. 93-114.

Hoffmann, Patrik, Dutoit, Bertrand, Salathe, Rene-Paul, Comparison of mechanically drawn and protection layer chemically etched optical fiber tips: Ultramicroscopy v. 61 no. 1-4 Dec 1995. p. 165-170.

Holy, V., Kubena, J., van den Hoogenhof, W.W., Vavra, I., Effect of interfacial-roughness replication on the diffuse X-ray reflection from periodical multilayers: Applied Physics A, Materials Science & Processing v. 60 no. 1 Jan 1995.p. 93-96.

Holzwarth, M., Wissing, M., Simeonova, D.S., Tzanev, S., Snowdon,.J., Yordanov, O.I., Preparation of atomically smooth surfaces via sputtering under glancing incidence conditions: Surface Science v. 331-333 no. pt B Jul 1 1995. p. 1093-1098.

Homma, Y., Hibino, H., Aizawa, N., Direct evidence for Ge preferential growth at steps and out-of-phase boundaries of (7 X 7) domains on Si(111) in solid phase epitaxy: Surface Science v. 324 no. 1 Feb 1 1995. p. L333-L336.

Honda, Tokuyuki, Yamashita, Toshihisa, Matsumoto, Hirokazu, Optical measurements of ultrasonic nanometer motion of rough surface by two-wave mixing in Bi//1//2SiO//2//0: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 7A July 1995. p. 3737-3740.

Hong, S.Q., Wetteroth, T., Shin, H., Wilson, S.R., Huang, W.M., oerstner, J., Racanelli, M., Shin, H.C., Hwang, B.-Y., Schroder, D.K., Integrity of gate oxide on TFSOI materials: IEEE International SOI Conference 1995. IEEE, Piscataway, NJ, p. 22-23.

Hontinfinde, F., Touzani, M., Growth kinetics of bcc crystal surfaces: Surface Science v. 338 no. 1-3 Sept 10 1995. p. 236-246.

Hordon, L.S., Boyer, B.B., Pease, R.F.W., Improved retarding field optics via image outside field: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 3 May-Jun 1995. p. 826-832.

Horiuchi, Osamu, Itoh, Shyunji, Flatness and surface roughness of diamond-turned surface: Proceedings of SPIE - The International Society for Optical Engineering v. 2576 1995. Bellingham, WA, p. 406-413.

Horng, Jeng Haur, Lin, Jen Fin, Li, Ke Yang, Effect of surface roughness on steel roller scuffing: Wear v. 184 no. 2 May 1995. p. 203-212.

Hossain, Mustaque, Parcells, William H. Jr: Smoothness control in asphalt pavement construction, Development of specifications, implementation, and results, Transportation Research Record no. 1491 Jul 1995. p. 40-45.

Hosseinmostafa, A.R., Lytle, V.I., Jezek, K.C., Gogineni, S.P., ckley, S.F., Moore, R.K., Comparison of radar backscatter from Antarctic and Arctic sea ice: Journal of Electromagnetic Waves and Applications v. 9 no. 3 1995. p. 421- 438.

Howland, Rebecca S., Larson, C. Thomas, How to correlate laser-scattering surface inspection: Laser Focus World v. 31 no. 7 Jul 1995. p. 99-103.

Hsueh, C.H., Rebillat, F., Lamon, J., Lara-Curzio, E., Analyses of fiber push-out tests performed on nicalon/SiC composites with tailored interfaces: Composites Engineering v. 5 no. 10-11 1995. p. 1387-1401.

Hu, Zu-shao, Wang, Pu Sen, Hsu, Stephen M., Spectroscopic study of a copper surface under boundary lubrication, I.Chemisorbed stearic acid multilayers: Lubrication Science v. 7 no. 4 July 1995. p. 293-297.

Huang, Dongzhou, Wang, Ton-Lo, Shahawy, Mohsen, Dynamic behavior of horizontally curved I-girder bridges: Computers and Structures v. 57 no. 4 Nov 17 1995. p. 703-714.

Huang, Ting, Lepoutre, Pierre, Coating-paper interactions - the effect of basestock roughness, absorbency and formation on coated paper properties: Paperi ja Puu/Paper and Timber v. 77 no. 8 1995. p. 484-490.

Hume, Terry M., Beamsley, Brett, Green, Malcolm O., de Lange, Willem P., Hicks, D. Murray, Influence of seabed topography and roughness on longshore wave processes: Coastal Dynamics Coastal Dynamics - Proceedings of the International Conference 1995. ASCE, New York. p. 975-986.

Hyde, T.H., Yaghi, A., Experimental investigation of dynamic crack propagation: Journal of Strain Analysis for Engineering Design v. 30 no. 3 Jul 1995.p. 175-183.

Hyre, Matthew R., Glicksman, Leon R., Experimental investigation of heat transfer enhancement in circulating fluidized beds: ASME/JSME Thermal Engineering Joint Conference - Proceedings v. 2, 1995. ASME, New York. p. 477-483.

Ichitsubo, Makoto, Tazawa, Ei-ichi, Takemura, Kazuo, Kawai, Kenji, Influence of surface texture on color transition of mortar: Transactions of the Japan Concrete Institute v. 17 1995. p. 389-396.

Ikemiya, Norihito, Miyaoka, Shinji, Hara, Shigeta, In situ observations of the initial stage of electrodeposition of Cuon Au(100) from an aqueous sulfuric acid solution using atomic force microscopy: Surface Science v. 327 no. 3 Apr 10 1995. p. 261-273.

Ikuse, Yasushi, Nonokawa, Takeshi, Kawabata, Noritugu, Kamo, Takehiko, uzawa, Yoshihiko, Unno, Kuniaki, Development of new ultrasonic dressing equipment: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 7 July 1995. p. 986-990.

Imadojemu, H.E., Hong, K.T., Webb, R.L., Pool boiling of R-11 refrigerant and water on oxidized enhanced tubes: Journal of Enhanced Heat Transfer v. 2 no. 3 1995. p. 189-198.

Imai, Shigeru, Haga, Takeo, Matsuzaki, Osamu, Hattori, Takeo, atsumura, Masakiyo, Atomic layer etching of silicon by thermal desorption method: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 9A Sep 1995. p. 5049-5053.

Inadome, T., Hayashi, K., Nakashima, Y., Tsumura, H., Sugioka, Y., Comparison of bone-implant interface shear strength of hydroxyapatite- coated and alumina-coated metal implants: Journal of Biomedical Materials Research v. 29 no. 1 Jan 1995. p. 19-24.

Inoue, Kazuyuki, Tokoro, Maki, Suzuki, Noritomo, Matsubara, Ryohji, akano, Kenji, Sidewall-less depth profiling with auger electron spectroscopy: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 12A Dec 1995. p. 6483-6486.

Inoue, N., Nishikawa, W., Yamamoto, T., Yasuoka, Y., Surface smoothness of YBCO thin-films deposited by RF-sputtering: Vacuum v. 46 no. 12 Dec 1995. p. 1381-1384.

Ippolito, R., Iuliano, L., Gatto, A., Benchmarking of rapid prototyping techniques in terms of dimensional accuracy and surface finish: CIRP Annals - Manufacturing Technology v. 44 no. 1 1995. p. 157-160.

Ishida, Takahiro, Nagao, Masayuki, Kosaki, Masamitsu, Effect of instantaneous voltage change rate on appearance of swarming pulsive microdischarges: Proceedings of the Symposium on Electrical Insulating Materials 1995.Inst of Electrical Engineers of Japan, Tokyo, Japan. p. 205-208.

Ishiyama, Toshihiko, Nagase, Masao, Examination of correlation of surface morphologies of top-silicon and buried oxide layers in high-temperature-annealed separation by implanted oxygen wafers: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 11 Nov 1995. p. 6019-6020.

Itoh, Yoshiyasu, Saitoh, Masahiro, Honda, Keizo, Miyazaki, Matuo, Effect of surface treatment for metals by transferred arc: Zairyo/Journal of the Society of Materials Science, Japan v. 44 no. 498, Mar 1995. p. 303-308.

Ivanov, A., Zaitsev, V., Naumenko, M., Karetnikov, S., Study of the thermal bar and other hydrological phenomena in Lake Ladoga using Almaz-1 and ERS-1 SAR imagery: International Geoscience and Remote Sensing Symposium (IGARSS) v. 3, 1995. IEEE, Piscataway, NJ, 5CH35770. p. 1985-1987.

Ivanov, Alexander P., Visco-elastic approach to impact with friction: Impact, Waves, and Fracture American Society of Mechanical Engineers, Applied Mechanics Division, AMD v. 205 1995. ASME, New York. p. 115-127.

Iwabe, Hiroyasu, Shimada, Tomoharu, Establishment of high-accuracy and high-efficiency machining method for scroll-shape workpiece with end mill (1st report, proposal of high-accuracy and high-efficiency machining methods based on maximum chip area and surface roughness): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 583 Mar 1995. p. 1184-1191.

Iwamoto, N.E., Comparisons of experimental data to indices of adhesion derived from dielectric models: Polymer Engineering and Science v. 35 no. 22 Nov 1995. p. 1811-1817.

Iwasaki, Hiroshi, Iwamoto, Atsushi, Sudoh, Koichi, Yoshinobu, Tatsuo, Dynamic scaling in electrochemical deposition: Fractal Aspects of Materials, Materials Research Society Symposium Proceedings v. 367 1995. Pittsburgh, PA, p. 159- 168.

Jahn, U., Menniger, J., Kwok, S.H., Runge, E., Fujiwara, K., Hey, R., rahn, H.T., Cathodoluminescence microscopy of inhomogeneities in semiconductor heterostructures: Physica Status Solidi (A) Applied Research v. 150 no. 1 Jul 1995. p. 439- 452.

James, C.S., Cottino, C.F.G., Experimental study of flow over artificial bed forms: Water S.A. v. 21 no. 4 Oct 1995. p. 299-305.

Jangchud, Ittipol, Serrano, Alejandro M., Eby, Ronald K., Meador, ichael A., Scanning probe microscopes: Advanced Materials & Processes v. 148 no. 1 Jul 1995. p. 33-34.

Janssen, H., Diesing, D., Otto, A., Enhanced inverse photoemission by hot electrons at strongly charged silver surfaces: Surface Science v. 331-333 no. pt B Jul 1 1995. p. 1267-1271.

Javier Alvarez, Luis, Eduardo Leon, Luis, Fernandez Sanz, Javier, ose Capitan, Maria, Antonio Odriozola, Jose, Micropore formation mechanisms in gamma -Al//2O//3: Surface Science v. 322 no. 1-3 Jan 1 1995. p. 185-192.

Jenichen, B., Neuroth, H., Brar, B., Kroemer, H., Structural properties of InAs/AlSb superlattices: Strained Layer Epitaxy - Materials, Processing, and Device Applications, Materials Research Society Symposium Proceedings v. 379 1995, p. 493-498.

Jeon, Hyeongtag, Choi, Hyungbok, Cho, Y.S., Ryoo, K.K., Jung, S.D., Effects of UV/O//3 and SC1 steps for the HF last silicon wafer cleaning: Ultraclean Semiconductor Processing Technology and Surface Chemical Cleaning and Passivation, Materials Research Society Symposium Proceedings v. 386,1995. p. 297-302.

Jeon, Joong S., Raghavan, Srini, Electrochemical aspects of etching and passivation of silicon in alkaline solutions: Ultraclean Semiconductor Processing Technology and Surface Chemical Cleaning and Passivation, Materials Research Society Symposium Proceedings v. 386 1995, p. 63-68.

Jessell, M.W., Cox, S.J.D., Schwarze, Phillip, and Power, W.L., The anisotropy of surface roughness measured using a digital photogrammetric technique, *in* Ameen, M.S., ed., Fractography—fracture topography as a tool in fracture mechanics and stress analysis: London, Geological Society Special Publication No. 92, p. 27-37,(1995).

Ji, Jiankang, Thomsen, Anton, Skriver, Henning, Estimating soil moisture using the Danish polarimetric SAR: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, 5CH35770. p. 942-944.

Jiaa, C.L., Teng, E., Eltoukhy, A., Surface microtexture characteristics of alternative substrate thin film media and their relationship to tribological performance: Surface & Coatings Technology v. 73 no. 1-2 Jul 1995. p. 79-90.

Jiang, W., Baumgaertner, H., Eisele, I., Excimer-laser-induced etching of silicon in chlorine atmosphere at a wavelength of 248 nm: Applied Surface Science v. 86 no. 1 Febr 1995. p. 564-567.

Johnson, M.T., Jungblut, R., Kelly, P.J., den Broeder, F.J.A., Perpendicular magnetic anisotropy of multilayers, recent insights: Journal of Magnetism and Magnetic Materials v. 148 no. 1-2 Jul 1 1995. p. 118-124.

Johnson, Paul E., Arnold, David V., Backscatter sensitivity to the directionality and power parameter of a two-dimensional scattering model: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, 5CH35770. p. 1364-1366.

Jonasson, M., 3D surface topography applied to forming and painting of autobody panels: Dept. Prod. Eng., Chalmers Univ. Tech., Sweden, (May 1995).

Jones, L.A., Taylor, G.M., Wei, F.-X., Thomas, D.F., Chemical etching of silicon, smooth, rough, and glowing surfaces: Progress in Surface Science v. 50 no. 1-4 Sep-Dec 1995. p. 283-293.

Jonsdottir, F., Three dimensional surface waviness of an epitaxial layer due to surface diffusion induced by interface misfit dislocations: Thin Films, Stresses and Mechanical Properties V, Materials Research Society Symposium Proceedings v. 356, 1995. p. 45-50.

Jonsdottir, F., Freund, L.B., Equilibrium surface roughness of a strained epitaxial film due to surface diffusion induced by interface misfit dislocations: Mechanics of Materials v. 20 no. 4 Jun 1995. p. 337-349.

Jonsdottir, Fjola, Computation of equilibrium surface fluctuations in strained epitaxial films due to interface misfit dislocations: Modelling and Simulation in Materials Science and Engineering v. 3 no. 4Jul 1995. p. 503-520.

Jonsson, J., Ranby, B., Mary, D., Laurent, C., Mayoux, C., Electroluminescence from polyolefins subjected to a homogeneous ac field: IEEE Transactions on Dielectrics and Electrical Insulation v. 2 no. 1Feb 1995. p. 107-113.

Jose-Yacaman, Miguel, Tehuacanero, Samuel, Zorrilla, Cristina, Diaz, abriela, Direct evidence of surface roughness in small metallic particles: Synthesis and Properties of Advanced Catalytic Materials, Materials Research Society Symposium Proceedings v. 368 1995. Pittsburgh, PA,. 133-138.

Juang, Jea-Tzyy, Effect of roughness to irregular wave run-up: Proceedings of the Coastal Engineering Conference v. 1 1995. ASCE, New York. p. 1169-1181.

Judge, Norman R., Crankshafts finished and sized: American Machinist v. 139 no. 6 Jun 1995. 3pp.

Jung, H.Y., Antolovich, S.D., Experimental characterization of roughness-induced crack closure in Al- Li 2090 alloy: Scripta Metallurgica et Materialia v. 33 no. 2 Jul 15 1995. p. 275-281.

Junker, G.P., Kishk, A.A., Glisson, A.W., Kajfez, D., Effect of fabrication imperfections for ground-plane-backed dielectric- resonator antennas: IEEE Antennas & Propagation Magazine v. 37 no. 1 Feb 1995. p. 40-47.


# 1995 K-L


Kacerek, Timothy F., Clemmens, Albert, Sanfilippo, Franck, Test cases for canal control algorithms with examples: International Water Resources Engineering Conference - Proceedings v.1 1995. ASCE, New York. p. 184-188.

Kaczmarek, L.M., Harris, J.M., O'Connor, B.A., Modelling moveable bed roughness and friction for spectral waves: Proceedings of the Coastal Engineering Conference v. 1 1995. ASCE, New York. p. 300-314.

Kadodwala, M.F., Davis, A.A., Scragg, G., Cowie, B.C.C., Kerkar, M., oodruff, D.P., Jones, Robert G., Structural determination of the Cu(111)-( root 3 X root 3)R30 degree -Cl/Br surface using the normal incidence X-ray standing wave method: Surface Science v. 324 no. 2-3 Feb 10 1995. p. 122-132.

Kafader, U., Sirringhaus, H., von Kanel, H., In situ DC-plasma cleaning of silicon surfaces: Applied Surface Science v. 90 no. 3 Nov 1995. p. 297-302.

Kamarinos, Georges, For a new educational strategy for ULSI microelectronics: Materials Science & Engineering A, Structural Materials, Properties, Microstructure and Processing v. A199 no. 1 Aug 1 1995. p. 45-51.

Kamikawaji, T., Shioiri, T., Funahashi, T., Okawa, M., Kaneko, E., hshima, I., Generation of microparticles from copper-chromium contacts in vacuum: IEEE Transactions on Power Delivery v. 10 no. 1 Jan 1995. p. 286-292.

Kaminska, Anna M., Guziewicz, Marek, New ellipsometric model of wet and dry etched GaAs surfaces: Thin Solid Films v. 254 no. 1-2 Jan 1 1995. p. 194-199.

Kamitani, Shunpei, Nakanishi, Kenji, Takimura, Fumihiro, Surface conditions of deformed metal with regard to viscosity of lubricants: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 585 May 1995. p. 2025-2030.

Kannemeyer, L., Visser, A.T., Calibration of HDM-III performance models for use in pavement management of South African national roads: Transportation Research Record no. 1508 Jul 1995. p. 31-38.

Kaplan, Lance M., Kuo, C.-C. Jay, Texture roughness analysis and synthesis via extended self-similar(ESS) model: IEEE Transactions on Pattern Analysis and Machine Intelligence v. 17 no.11 Nov 1995. p. 1043-1056.

Karaki-Doy, Toshiroh, Nakagawa, Takeo, Kasai, T. Yoshio, Goto, oshitaka, New high-precision polishing method for nonlinear chalcone organic crystals: Journal of the Electrochemical Society v. 142 no. 12 Dec 1995. p. 4257- 4261.

Karnis, A., Effect of wood species and process on the linting propensity and surface roughening of mechanical pulps: Journal of Pulp and Paper Science v. 21 no. 9 Sept 1995. p. J321-J329.

Kasischke, Eric S., Bourgeau-Chavez, Laura L., French, Nancy H.F., Multi-sensor analysis of the effects of a wildfire in an Alaskan black spruce forest: Combined Optical-Microwave Earth and Atmosphere Sensing - Conference Proceedings 1995. IEEE, Piscataway, NJ, 5TH 8015. p. 21.

Kasparis, T., Tzannes, N.S., Bassiouni, M., Chen, Q., Texture descnption using fractal and energy features: Computers & Electrical Engineering v. 21 no. 1 Jan 1995. p. 21-32.

Kaspi, R., Barnett, S.A., Hultman, L., Growth of InGaAsSb layers in the miscibility gap, use of very-low- energy ion irradiation to reduce alloy decomposition: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 3 May-Jun 1995. p. 978-987.

Kaspi, Ron, Evans, Keith R., Reynolds, Don C., Brown, Jeff, kowronski, Marek, Surfactant-mediated growth of AlGaAs by molecular beam epitaxy: Strained Layer Epitaxy - Materials, Processing, and Device Applications, Materials Research Society Symposium Proceedings v. 379 1995,. p. 79-84.

Kato, Akira, Kawamura, Mitsuo, Nakaya, Ichiro, Damage monitoring of metal materials by laser speckle assisted by image processing techniques (relationship between distribution of laser speckle and surface properties): JSME International Journal, Series A, Mechanics and Material Engineering v. 38 no. 2 Apr 1995. p. 249-257.

Kato, Kazuteru, Kitakami, Osamu, Shimada, Yutaka, Magneto resistance and interlayer coupling in Co-Pt/Cu/Permalloy sandwiches: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 2A Feb 1995. p. 492-496.

Katoh, Kenji, Fujita, Hideomi, Sasaki, Hideharu, Macroscopic wetting behavior of a two-dimensional meniscus under ahorizontal plate: Journal of Fluids Engineering, Transactions of the ASME v. 117 no. 2 Jun1995. p. 303-308.

Katsuki, Akira, Liu, Zheng Chang, Sakai, Tadao, Matsuoka, Hironori, Influence of properties of base oil for cutting oil on action of sulfurous EP additive during turning (2nd report, influence of molecular weight distribution of base oil): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 583 Mar 1995. p. 1177-1183.

Katsuragawa, Tadao, Chiba, Eriko, Okada, Kenji, Tani, Katsuhiko, omono, Hidenori, Surface structure analysis of polyacrylate thin films: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 2A Feb 1995. p. 649-654.

Katz, Daniel M., Watts, Frederick J., Burroughs, Edward R., Effects of surface roughness and rainfall impact on overland flow: Journal of Hydraulic Engineering v. 121 no. 7 Jul 1995. p. 546-553.

Kawamura, Tomoaki, Takenaka, Hisataka, Hayashi, Takayoshi, Independent characterization of density and interface roughness of multilayers using x-ray standing waves: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 6A Jun 1995. p. 3290-3293.

Kaye, Brian H., Gratton-Liimatainen, Julie, Faddis, Neil, Studying the avalanching behaviour of a powder in a rotating disc: Particle & Particle Systems Characterization, Measurement and Description of Particle Properties and Behavior in Powders and other Disperse Systems v. 12 no. 5 Oct 1995. p. 232-236.

Kazama, Toshiharu, Yamaguchi, Atsushi, Experiment on mixed lubrication of hydrostatic thrust bearings for hydraulic equipment: Journal of Tribology, Transactions of the ASME v. 117 no. 3 Jul 1995. p. 399-402.

Keisler, C., Latiallade, J.L., Effect of substrate roughness characteristics on wettability and on the mechanical properties of adhesive joints loaded at high strain rates: Journal of Adhesion Science and Technology v. 9 no. 4 1995. p. 395-411.

Kelly, David M., Fullerton, Eric E., Santa-Maria, Jacobo, Schuller, van K., Simple closed-form expression for the x-ray reflectivity from multilayers with cumulative roughness: Scripta Metallurgica et Materialia v. 33 no. 10-11 Dec 1 1995. p. 1603- 1608.

Keogh, P.S., Mu, C., Burrows, C.R., Optimized design of vibration controllers for steady and transient excitation of flexible rotors: Proceedings of the Institution of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science v. 209 no. 3 1995. p. 155-168.

Kersten, Bart A.G., Zandvliet, Harold J.W., Blank, Dave H.A., vanSilfhout, A., Step structure of vicinal Ge(001) surfaces: Surface Science v. 322 no. 1-3 Jan 1 1995. p. 1-7.

Khrustalev, D., Faghri, A., Heat transfer during evaporation on capillary-grooved structures of heat pipes: Journal of Heat Transfer, Transactions ASME v. 117 no. 3 Aug 1995. p. 740- 747.

Khurshudov, Andrew G., Drozdov, Yuri N., Kato, Koji, Transitional phenomena in the lubricated heavily loaded sliding contact of ceramics and steel: Wear v. 184 no. 2 May 1995. p. 179-186.

Khurshudov, Andrew, Kato, Koji, Wear of the atomic force microscope tip under light load, studied by atomic force microscopy: Ultramicroscopy v. 60 no. 1 Aug 1995. p. 11-16.

Kigle-Boeckler, Gabriele: Transparency and its objective evaluation, transmittance, haze, and clarity: Annual Technical Conference - ANTEC, Conference Proceedings v. 3 1995.Soc of Plastics Engineers, Brookfield, CT, p. 3251-3254.

Kikuchi, Akihiko, Hoshi, Hiroyuki, Kishino, Katsumi, Effects of V/III supply ratio on improvement of crystal quality of zincblende GaN grown by gas source molecular beam epitaxy using RF-radical nitrogen source: Journal of Crystal Growth v. 150 no. 1-4 pt 2 May 1 1995. p. 897-901.

Kim, Byeong Hee, Chu, Chong Nam, Characteristics of filleted endmill in precision machining of sculptured surface: Technical Paper - Society of Manufacturing Engineers. MR 1995. 5p.

Kim, Byung Nam, Chung, Myung Kyoon, Experimental study of roughness effects on the separated flow over abackward-facing step: AIAA Journal v. 33 no. 1 Jan 1995. p. 159-161.

Kim, Eungsoo, Kang, Suk-Hee, Lim, Soon-Kwon, Stress behavior of CVD-PSG films depending on deposition methods and hillock suppression: Thin Films, Stresses and Mechanical Properties V, Materials Research Society Symposium Proceedings v. 356 1995. Pittsburgh, PA, p. 495-500.

Kim, G.P., Panin, G.G., Binding capability of calcium hydroxide: Liteinoe Proizvodstvo no. 6 June 1995. p. 19.

Kim, Ho Sung, Wang, Xiang Ming, Temperature and frequency effects on fatigue crack growth in acrylonitrile-butadiene-styrene (ABS): Journal of Applied Polymer Science v. 57 no. 7 Aug 15 1995. p. 811-817.

Kim, Jeong-Du, Choi, Min-Seog, Simulation for the prediction of surface-accuracy in magnetic abrasive machining: Journal of Materials Processing Technology v. 53 no. 3-4 Sep 1995. p. 630- 642.

Kim, Jeong-Du, Choi, Min-Seog, Study on the optimization of the cylindrical lapping process for engineering fine-ceramics (Al//2O//3) by the statistical design method: Journal of Materials Processing Technology v. 52 no. 2-4 Jun-Jul 1995. p. 368-385.

Kim, Sam-Dong, Lee, Hoojeong, Harris, James S. Jr., Interface smoothing of high indium content InGaAs layers on GaAs: Journal of the Electrochemical Society v. 142 no. 5 May 1995. p. 1667- 1670.

Kim, Sang Rak, Simulational study of granular boundary flows in two dimension: Computational Materials Science v. 4 no. 2 July 1995. p. 125-132.

Kim, Sangbo, Collins, R.W., Optical characterization of continuous compositional gradients in thin films by real time spectroscopic ellipsometry: Applied Physics Letters v. 67 no. 20 Nov 13 1995. p. 3010-3012.

Kim, Sangbo, Lu, Yiwei, Collins, R.W., Characterization of compositional gradients in amorphous semiconductor thin films by real time spectroscopic ellipsometry: Amorphous Silicon Technology, Materials Research Society Symposium Proceedings v. 377 1995,. p. 15- 20.

Kim, Seung-Joon, Shin, Kisoo, Park, Hee-Kook, Dry post-etch treatment using SF//6 chemistry for 0.2 mu m contact hole: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 9A Sep 1995. p. 5001-5005.

Kimberlin, K.R., Tringides, M.C., Flux dependence of in situ electron transport in Ag/Si(111): Journal of Vacuum Science & Technology A, Vacuum, Surfaces, and Films, v. 13 no. 2 Mar-Apr 1995. p. 462-466.

Kirsten, M., Wenk, B., Ericson, F., Schweitz, J.A., Riethmueller, W., ange, P., Deposition of thick doped polysilicon films with low stress in anepitaxial reactor for surface micromachining applications: Thin Solid Films v. 259 no. 2 Apr 15 1995. p. 181-187.

Kiyohara, Shuji, Miyamoto, Iwao, Hydrogen ion beam processing of single crystal diamond chips: Beam-Solid Interactions for Materials Synthesis and Characterization, Materials Research Society Symposium Proceedings v. 354 1995. Pittsburgh, PA, p. 717-722.

Klein, Imrich, Klein, Ron J., Effect of metal surface roughness on the frictional properties of resins: Annual Technical Conference - ANTEC, Conference Proceedings v. 1 1995.Soc of Plastics Engineers, Brookfield, CT, p. 81-87.

Kleineberg, U., Osterried, K., Stock, H.-J., Menke, D., chmiedeskamp, B., Fuchs, D., Mueller, P., Scholze, F., Heidemann, K.F., elles, B., Heinzmann, U., Mo/Si multilayer-coated ruled blazed gratings for the soft-x-rayregion: Applied Optics v. 34 no. 28 Oct 1 1995. p. 6506-6512.

Klimczak, T., Hanzel-Powierza, Z., Application of the filter with dynamically controlled transmission band in surface texture analysis: CIRP Annals - Manufacturing Technology v. 44 no. 1 1995. p. 505-508.

Klimeck, Gerhard, Lake, Roger, Bowen, R. Chris, Frensley, William R., lanks, Daniel, Nano Electronic Modeling (NEMO): Annual Device Research Conference Digest 1995. IEEE, Piscataway, NJ, 5TH8109. p. 52-53.

Klingenberg, D.J., Cooper, S.L., Electrostatics at rough interfaces: Journal of Electrostatics v. 35 no. 4 Sept 1995. p. 339-348.

Klocke, F., Koenig, W., Appropriate conditioning strategies increase the performance capabilities of vitrified-bond CBN grinding wheels: CIRP Annals - Manufacturing Technology v. 44 no. 1 1995. p. 305-310.

Knaebchen, Andreas, Adaptation of the specularity-parameter concept to size-quantized thin metallic films: Journal of Physics Condensed Matter v. 7 no. 1 Jan 2 1995. p. 55-67.

Knothe, K., Liebelt, S., Determination of temperatures for sliding contact with applications for wheel-rail systems: Wear v. 189 no. 1-2 Oct 1995. p. 91-99.

Kobayashi, Akiko, Sekiguchi, Atsushi, Okada, Osamu, Hosokawa, aokichi, Sugai, Kazumi, Kishida, Shyunji, Okabayashi, Hidekazu, Shinzawa, sutomu, Yako, Tadaaki, Kadokura, Hidekimi, Growth process of thin chemical vapor deposition-aluminum films and its underlayer dependence - real-time monitoring of reflected light intensityat the depositing surface: Electronics & Communications in Japan, Part II, Electronics (English translation of Denshi Tsushin Gakkai Ronbunshi) v. 78 no. 12 Dec 1995. p. 50-58.

Koh, Joohyun, Lu, Yiwei, Kim, Sangbo, Burnham, J.S., Wronski, C.R., ollins, R.W., Real time spectroscopic ellipsometry study of hydrogenated amorphous silicon p. -i-no. solar cells, characterization of microstructural evolution and optical gaps: Applied Physics Letters v. 67 no. 18 Oct 30 1995. p. 2669-2671.

Kolpakov, S.S., Kapnin, V.V., Mukhin, Yu.A., Solov'ev, V.N., Chromizing the work rolls of skin rolling mill: Stal' no. 8 Aug 1995. p. 48-50.

Konarski, P., Herman, M.A., Kozhukhov, A.V., Obodnikov, V.I., Morphology of the InAlAs/InP interface in the MBE-grown heterostructures analysed by SIMS depth profiling: Thin Solid Films v. 267 no. 1-2 Oct 15 1995. p. 114-120.

Kools, J.C.S., Rijks, Th.G.S.M., De Veirman, A.E.M., Coehoorn, R., On the ferromagnetic interlayer coupling in exchange-biased spin-valve multilayers: IEEE Transactions on Magnetics v. 31 no. 6 pt 2 Nov 1995. p. 3918-3920.

Koopman, N., Adema, G., Nangalia, S., Schneider, M., Saba, V., Flip chip process development techniques using a modified laboratory aligner bonder: Proceedings of the IEEE/CPMT International Electronic

Manufacturing Technology (IEMT) Symposium 1995, p. 29-35.

Kopalinsky, E.M., Black, A.J., Metallic sliding friction under boundary lubricated conditions, investigation of the influence of lubricant at the start of sliding: Wear v. 190 no. 2 Dec 1995. p. 197-203.

Kopalinsky, E.M., Oxley, P.L.B., Investigation of the deformation and damage sustained by a wearing surface in sliding metallic friction: Journal of Tribology, Transactions of the ASME v. 117 no. 2 Apr 1995. p. 315-320.

Kosobukin, V.A., Sazhin, M.I., Sel'kin, A.V., Temperature quenching of excitons in resonant elastic light scattering from rough surfaces of crystals: Solid State Communications v. 94 no. 11 Jun 1995. p. 947-951.

Kostaedt, Peter, Jiang, Yimin, Liu, Mario, Dissipative dynamics of the **3He A-B interface in finite geometries: Physica B, Condensed Matter v. 210 no. 3-4 May 2 1995. p. 347-358.

Kostecki, R., Augustynski, J., Effect of the surface roughness on the spectral distribution of photoemission current at the silver/solution contact: Journal of Applied Physics v. 77 no. 9 May 1 1995. p. 4701-4705.

Kostov, K.G., Vichev, B.I., Near-surface moisture profile effects on the microwave emission of bare soils: International Geoscience and Remote Sensing Symposium (IGARSS) v. 3, 1995. IEEE, Piscataway, NJ, 5CH35770. p. 1991-1993.

Kovscek, A.R., Tretheway, D.C., Persoff, P., Radke, C.J., Foam flow through a transparent rough-walled rock fracture: Journal of Petroleum Science & Engineering v. 13 no. 2 Jun 1995. p. 75-86.

Kramer, Sven E., Solder balls: Printed Circuit Fabrication v. 18 no. 12 Dec 1995. p. 18-20.

Krause, P., Obermeier, E., Etch rate and surface roughness of deep narrow U-grooves in (1 1 0)- oriented silicon: Journal of Micromechanics and Microengineering v. 5 no. 2 Jun 1995. p. 112-114.

Krause, P., Sporys, M., Obermeier, E., Lange, K., Grigull, S., Silicon to silicon anodic bonding using evaporated glass: International Conference on Solid-State Sensors and Actuators, and Eurosensors IX, Proceedings v. 1 1995. IEEE, Piscataway, NJ. p. 228-231.

Krim, J., Panella, V., Probing surface roughness and porosity through adsorption of wetting layers: Dynamics in Small Confining Systems II, Materials Research Society Symposium Proceedings v. 366 1995. Pittsburgh, PA,. p. 231-239.

Krishna, Prem, Wind loads on low rise buildings - a review: Journal of Wind Engineering and Industrial Aerodynamics v. 54-55 Feb1995. p. 383-396.

Kroon, L.J.M., de Bruin, H.A.R., Crau field experiment, turbulent exchange in the surface layer under conditions of strong local advection: Journal of Hydrology v. 166 no. 3-4 Apr 1995. p. 327-351.

Krueger, D., Schlote, J., Roepke, W., Kurps, R., Quick, Ch., Shallow junction formation by phosphorus diffusion from in situ spike-doped chemical vapor deposited amorphous silicon: Microelectronic Engineering v. 26 no. 2 Apr 1995. p. 119-129.

Krushenko, G.G., Balashov, B.A., Vasilenko, Z.A., A new chill mold wash for aluminium alloy castings: Liteinoe Proizvodstvo no. 6 June 1995. p. 26.

Kruszewski, Stefan, Mallek, Janusz, Influence of surface roughness on the surface-enhanced Raman scattering (SERS) signal: Proceedings of SPIE - The International Society for Optical Engineering v. 2202 1995. Bellingham, WA, p. 435-439.

Ksaibati, Khaled, Staigle, Rick, Adkins, Thomas M., Pavement construction smoothness specifications in the United States: Transportation Research Record no. 1491 Jul 1995. p. 27-32.

Kulakov, B.A., Dubrovin, V.K., Kulakov, A.B., Znamenskij, L.G., Ways to reduce the defectiveness of nickel alloy castings during investment casting: Liteinoe Proizvodstvo no. 10 Oct 1995. p. 24-25.

Kulatilake, P.H.S.W., Shou, G., Huang, T.H., Morgan, R.M., New peak shear strength criteria for anisotropic rock joints: International Journal of Rock Mechanics and Mining Sciences &Geomechanics Abstracts v. 32 no. 7 Oct 1995. p. 673-697.

Kumai, Shinji, Sekikawa, Akinori, Hu, Jianqun, Higo, Yakichi, unomura, Shigetomo, Effects of roughness-induced crack closure on fatigue crack growth in AC4CH cast aluminum alloys: Keikinzoku/Journal of Japan Institute of Light Metals v. 45 no. 4 Apr1995. p. 204-208.

Kumar, Pradeep, Gaindhar, J.L., Off-line quality control for V-process castings: Quality and Reliability Engineering International v. 11 no. 3 May-Jun1995. p. 175-181.

Kumpfert, J., Kim, Y.W., Dimiduk, D.M., Effect of microstructure on fatigue and tensile properties of the gamma TiAl alloy Ti-46.5Al-3.0Nb-2.1Cr-0.2W: Materials Science & Engineering A, Structural Materials, Properties, Microstructure and Processing v. A192-19 no. pt 1 Feb 15 1995. p. 465-473.

Kunz, C., Voss, J., Scientific progress and improvement of optics in the VUV range: Review of Scientific Instruments v. 66 no. 2 pt 2 Feb 1995. p. 2021-2029.

Kuo, Edward Y.T., Joint perturbation scattering characterization of a littoral ocean bottom reverberation, theory, scattering strength predictions, and data comparisons: IEEE Journal of Oceanic Engineering v. 20 no. 3 Jul 1995. p. 198-210.

Kurata, Y., Kurashige, K., Ishibashi, H., Susa, K., Scintillation characteristics of GSO single crystal grown under O//2- containing atmosphere: IEEE Transactions on Nuclear Science v. 42 no. 4 pt 1 Aug 1995. p. 1038-1040.

Kurtz, Stuart J., Flow instabilities and melt fracture: Annual Technical Conference - ANTEC, Conference Proceedings v. 1 1995.Soc of Plastics Engineers, Brookfield, CT, p. 1092-1094.

Kuttel, Olivier M., Diederich, Leon, Schaller, Eliane, Carnal, livier, Schlapbach, Louis, Preparation and characterization of low surface roughness (111) and (100) natural diamonds by hydrogen plasma: Surface Science v. 337 no. 1-2 Aug 20 1995. p. L812-L818.

Kuz'min, V.L., Romanov, V.P., Influence of the surface profile and roughness on the ellipsometric parameters in a critical region: Optics and Spectroscopy (English translation of Optika iSpektroskopiya) v. 78 no. 1 Jan 1995. p. 101-109.

Kuznetsov, Leonid A., Models of a strip surface roughness formation during cold rolling: Modelling, Measurement & Control B, Solid & Fluid Mechanics &Thermics, Mechanical Systems v. 57 no. 1-3 1995. p. 50-64.

Kwa, T.A., Wolffenbuttel, R.F., Effect of solution contamination on etched silicon surfaces: Journal of Micromechanics and Microengineering v. 5 no. 2 Jun 1995. p. 95-97.

Kyu, Yeol Park, Dai, Gil Lee, Nakagawa, Takeo, Mirror surface grinding characteristics and mechanism of carbon fiber reinforced plastics: Journal of Materials Processing Technology v. 52 no. 2-4 Jun-Jul 1995. p. 386-398.

la Forgia, V., Nirchio, F., Pasquariello, G., Speranza, A., Sar ocean image inversion using neural network: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, p. 945-947.

Lacquaniti, V., Maggi, S., Monticone, E., Steni, R., Thickness dependence of electrical and structural properties of Nb thin films: Physica Status Solidi (A) Applied Research v. 151 no. 2 Oct 1995. p. 335- 344.

Ladouceur, F., Love, J.D., Effect of roughness and inhomogeneity on evanescent single-mode optical couplers: IEE Proceedings Optoelectronics v. 142 no. 6 Dec 1995. p. 288-292.

Lal, A.M. Wasantha, Calibration of riverbed roughness: Journal of Hydraulic Engineering v. 121 no. 9 Sep 1995. p. 664-671.

Lambert, M.A., Fletcher, L.S., Thermal contact conductance of nonflat, rough metals in vacuum: ASME/JSME Thermal Engineering Joint Conference - Proceedings v. 1, 1995. ASME, New York. p. 31-42.

Lane, Richard L., Li, Zhong, Surface roughness studies of deep plasma etching in crystalline silicon: Biennial University/Government/Industry Microelectronics Symposium -Proceedings 1995. IEEE, Piscataway, NJ, 5CH35779. p. 134-139.

Lankford, J., Blanchard, C.R., Agrawal, C.M., Wear mechanisms and particle generation in ultrahigh molecular weight polyethylene: Southern Biomedical Engineering Conference - Proceedings 1995. IEEE, Piscataway, NJ. p. 270-273.

Larkins, Grover L., Avello, Miriam Y., Boyce, James B., Fork, David K., Multilayer ferroelectric - high T//c structures with poled ferroelectric layers: IEEE Transactions on Applied Superconductivity v. 5 no. 2 pt 3 Jun 1995.p. 3049-3052.

Larson, C. Thomas, Applications of laser scanning systems to deposited dielectrics: Proceedings of SPIE - The International Society for Optical Engineering v. 2637 1995. Bellingham, WA, p. 46-51.

Lau, Y.L., Relative importance of mean velocity and bed shear on biofilm accumulation in open-channel flows: Water Science and Technology v. 32 no. 8 1995. p. 193-198.

Lavoie, C., Haveman, B., Nodwell, E., Pinnington, T., Tiedje, T., oldman, R.S., Kavanagh, K.L., Hutter, J.L., Bechhoefer, J., Light scattering study of the evolution of the surface morphology during growth of InGaAs on GaAs: Applications of Synchrotron Radiation Techniques to Materials Science II, Materials Research Society Symposium Proceedings v. 375 1995. p. 193-198.

Lazarenko, A.S., Mikhailovskij, I.M., Rabukhin, V.B., Velikodnaya,.A., Nanotopography and grain-boundary migration in the vicinity of triple junctions: Acta Metallurgica et Materialia v. 43 no. 2 Feb 1995. p. 639-643.

Le Bellac, D., Niklasson, G.A., Granqvist, C.G., Angular-selective optical transmittance of highly transparent Al-oxide- based films made by oblique-angle sputtering: Journal of Applied Physics v. 78 no. 4 Aug 15 1995. p. 2894-2896.

Leach, Sarah, Mitchell, Steve, Wiswell, Gene: Microgradient, effects of contact resistance, material properties and geometry for polymer-based sensor applications: Electrical Contacts, Proceedings of the Annual Holm Conference on Electrical Contacts 1995. IEEE, Piscataway, NJ. p. 330-337.

Lee, Dong-Gu, Singh, Rajiv K., Ion-beam polishing of diamond thin films: Beam-Solid Interactions for Materials Synthesis and Characterization, Materials Research Society Symposium Proceedings v. 354 1995. Pittsburgh, PA, p. 699-703.

Lee, Myung-Bok, Kawasaki, Masashi, Yoshimoto, Mamoru, Koinuma, ideomi, Heteroepitaxial growth of BaTiO//3 films on Si by pulsed laser deposition: Applied Physics Letters v. 66 no. 11 Mar 13 1995. p. 1331-1333.

Legoux, J.-G., Dallaire, S., Adhesion mechanisms of arc-sprayed zinc on concrete: Journal of Thermal Spray Technology v. 4 no. 4 Dec 1995. p. 395-400.

Lehman, Mario, Pomarico, Juan A., Torroba, Roberto D., Digital speckle pattern interferometry applied to a surface: Optical Engineering v. 34 no. 4 4 1995. p. 1148-1152.

Lemke, H., Mueller, S., Goeddenhenrich, T., Heiden, C., Influence of preparation conditions on the properties of sputtered Nd-Fe-B films: Physica Status Solidi (A) Applied Research v. 150 no. 2 Aug 1995. p. 723- 731.

Leshko, V.A., Potemkin, M.M., Estimation of microgeometry characteristics of the friction surfaces on the base of thermodynamic analysis of their contact conditions: Trenie i Iznos v. 16 no. 2 Mar-Apr 1995. p. 238-244.

Leung, P.T., Tse, W.S., Nonlocal electrodynamic effect on the enhancement factor for surface enhanced Raman scattering: Solid State Communications v. 95 no. 1 Jul 1995. p. 39-44.

Li, Dingqing, Selig, Ernest T., Wheel/track dynamic interaction, track substructure perspective: Vehicle System Dynamics v. 24 no. Suppl 1995. p. 183-196.

Li, G.G., Forouhi, A.R., Auberton-Herve, A., Wittkower, A., Optical characterization of silicon-on-insulator: IEEE International SOI Conference 1995. IEEE, Piscataway, NJ, 5CH35763. p. 106-107.

Li, Jian-Guo, Hausner, Hans, Wetting and infiltration of graphite materials by molten silicon: Scripta Metallurgica et Materialia v. 32 no. 3 Febr 1 1995. p. 377-382.

Li, Ming, Cui, Q., Cui, S.F., Zhang, L., Zhou, J.M., Mai, Z.H., Dong., Chen, H., Wu, F., X-ray reflectivity studies of the effect of surfactant on the growth of GeSi superlattices: Journal of Applied Physics v. 78 no. 3 Aug 1 1995. p. 1681-1684.

Li, Xiao Wu, Tian, JiFeng, Kang, Yan, Wang, ZhongGuang, Quantitative analysis of fracture surface by roughness and fractal method: Scripta Metallurgica et Materialia v. 33 no. 5 Sep 1 1995. p. 803-809.

Li, Xiaoping, Free-abrasive machining approach to dressing of resin-bonded CBN grinding wheels: Journal of Materials Processing Technology v. 48 no. 1-4 Jan 15 1995. p. 223-230.

Li, Yongda, Shen, Ke, Du, Lihui, Effects of oblique incidence and scattering on mode distributions in soft x-ray laser cavities: Proceedings of SPIE - The International Society for Optical Engineering v. 2520 1995. Bellingham, WA, p. 250-256.

Li, Yufeng, Menon, Aric K., Development and implementation of discrete texture for the improvement of tribological performance: Journal of Tribology, Transactions of the ASME v. 117 no. 2 Apr 1995. p. 279-284.

Liday, J., Kliment, V., Vogrincic, P., Tomek, S., Influence of $Ar^{**}$ plus and $Xe^{**}$ plus ion beam incidence angle on the depth resolution in AES: Vacuum v. 46 no. 1 Jan 1995. p. 53-55.

Lieh, Junghsen, Qi, Weigang, Simulation of dynamic truck loading on pavements using measured road roughness: Transportation Research Record no. 1501 Jul 1995. p. 13-21.

Liem, Steven Y., Chan, Kwong-Yu, Simulation study of platinum adsorption on graphite using the Sutton-Chen potential: Surface Science v. 328 no. 1-2 Apr 20 1995. p. 119-128.

Lim, L.C., Seng, Lee Kim, Lim, S.C., Effect of vapour blasting on fatigue life of an age-hardened aluminium alloy: Journal of Materials Processing Technology v. 48 no. 1-4 Jan 15 1995. p. 675-681.

Lin, Heng-Chih, Synder, J.P., Helms, C.R., New method to characterize thin oxide reliability: Ultraclean Semiconductor Processing Technology and Surface Chemical Cleaning and Passivation, Materials Research Society Symposium Proceedings v. 386,1995, p. 237-242.

Lin, Zone-Ching, Chen, Din-Yan, Study of cutting with a CBN tool: Journal of Materials Processing Technology v. 49 no. 1-2 Feb 1 1995. p. 149-164.

Liu, C., Leyland, A., Lyon, S., Matthews, A., a.c. impedance study on PVD CrN-coated mild steel with different surface roughnesses: Surface & Coatings Technology v. 76-77 no. 1-3 pt 2 Dec 1995. p. 623-631.

Liu, Hong-Yuan, Zhou, Li-Min, Mai, Yiu-Wing, Effect of interface roughness on fiber push-out stress: Journal of the American Ceramic Society v. 78 no. 3 Mar 1995. p. 560-566.

Liu, Meilin, Wang, Dongsheng, Preparation of La//1// minus //zSr//zCo//1// minus //yFe//yO//3//minus //x thin films, membranes, and coatings on dense and porous substrates: Journal of Materials Research v. 10 no. 12 Dec 1995. p. 3210-3221.

Liu, Meng, Takagi, Jun-ichiro, Influence of truing condition on the strength of ground ceramics - effect of speed-ratio between wheel and truer: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 1 Jan 1995. p. 152-156.

Liu, Shou-Bin, Yu, Hui-Fen, Design of a commercial optical instrument for surface roughness measurement: Proceedings of SPIE - The International Society for Optical Engineering v. 2349 1995. Bellingham, WA, p. 190-200.

Lloyd, S.J., Somekh, R.E., Stobbs, W.M., Structural characterisation of Fe-Cu multilayers of differing Fe thicknesses using transmission electron microscopy: Structure and Properties of Multilayered Thin Films, Materials Research Society Symposium Proceedings v. 382 1995. p. 155-160.

Lo, Sy-Wei, Die-workpiece interfacial behaviors in axisymmetric forging processes with flat dies: Tribology Transactions v. 38 no. 3 Jul 1995. p. 663-671.

Long, David G., Collyer, R. Scott, Reed, Ryan, Arnold, David V., Radar backscatter from a wind roughened water surface in the Bragg regime: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, 95CH35770. p. 948-950.

Lowes, T.D., Zinke-Allmang, M., Strained layer epitaxy on rough Si surfaces: Strained Layer Epitaxy - Materials, Processing, and Device Applications, Materials Research Society Symposium Proceedings v. 379 1995, p. 15-20.

Lu, Jyh-Woei, Sargent, Gordon A., Conrad, Hans, Study of the mechanisms of erosion in silicon single crystals using Hertzian fracture tests: Wear v. 186-187 no. 1 Jul 1995. p. 105-116.

Lu, Toh-Ming, Yang, Hong-Ning, Wang, Gwo-Ching, When interface gets rough: Fractal Aspects of Materials, Materials Research Society Symposium Proceedings v. 367 1995. Pittsburgh, PA, p. 283- 292.

Lu, Yiwei, Kim, Sangbo, Burnham, J.S., Chen, Ing-Shin, Lee, Yeeheng, trausser, Y.E., Wronski, C.R., Collins, R.W., Real time monitoring of amorphous silicon solar cell fabrication: Amorphous Silicon Technology, Materials Research Society Symposium Proceedings v. 377 1995, p. 603- 608.

Lu, Z., Hiskes, R., DiCarolis, S.A., Nel, A., Route, R.K., Feigelson,.S., Crystalline quality and surface morphology of (100) CeO//2 thin films grown on sapphire substrates by solid source metallorganic chemical vapor deposition: Journal of Crystal Growth v. 156 no. 3 Nov 2 1995. p. 227-234.

Luby, S., Majkova, E., Illekova, E., Sandrik, R., D'Anna, E., Luches., Perrone, A., Enzo, S., Effect of laser repetition rate on the melting and ablation of Ni//2//4Zr//7//6 alloy ribbon: Thin Solid Films v. 261 no. 1-2 Jun 1 1995. p. 154-159.

Lucas, Victor, Bonneau, Olivier, Frene, Jean, Roughness influence on turbulent flow through annular seals including inertia effects: American Society of Mechanical Engineers (Paper) 1995. ASME, New York. 8pp 95-TRIB-11.

Lundberg, Jan, Influence of surface roughness on normal-sliding lubrication: Tribology International v. 28 no. 5 Aug 1995. p. 317-322.

Lung, C.W., Fractal studies on the positron annihilation in metals: Materials Science Forum v. 175-178 no. pt 1 1995. p. 287-294.

Luo, Chang-Ping, Chin, Mee-Koy, Yuan, Z., Xu, Z.Y., Yang, X.P., hang, P.H., Growth interruption induced interface microroughness in single quantum wells: Journal of Crystal Growth v. 155 no. 3-4 Oct 2 1995. p. 272-275.

Luo, E.Z., Wollschlaeger, J., Wegner, F., Henzler, M., SPA-LEED studies of growth of Ag on Ag(111) at low temperatures: Applied Physics A, Materials Science & Processing v. 60 no. 1 Jan 1995.p. 19-25.

Luo, Y.F., Energy-distribution strategy in fast-cutting wire EDM: Journal of Materials Processing Technology v. 55 no. 3-4 Dec 1995. p. 380- 390.

Lyttle, D.J., Lu, J.R., Su, T.J., Thomas, R.K., Penfold, J., Structure of a dodecyltrimethyl ammonium bromide layer at the air/water interface determined by neutron reflection. Comparison of the monolayer structure of cationic surfactants with different chain lengths: Langmuir v. 11 no. 3 Mar 1995. p. 1001-1008.

## 1995 M-O

Ma, Y., Green, M.L., Feldman, L.C., Sapjeta, J., Hanson, K.J., eidman, T.W., Vapor phase SiO//2 etching and metallic contamination removal in an integrated cluster system: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 4 Jul-Aug 1995. p. 1460-1465.

Maaza, M., Gorenstein, A., Sella, C., Bridou, F., Pardo, B., Corno., Roger, G., Bohnke, O., Julien, C., Roughness effect on the lithium diffusivity in WO//3 thin films: Solid State Ionics IV, Materials Research Society Symposium Proceedings v. 369 1995. Pittsburgh, PA, p. 125- 130.

Machida, Terufumi, Okai, Toshihiko, Okada, Masuhiro, Kawashima, Yuji, Cup forming of fabric carbon fiber reinforced polycarbonate and polyetherimide sheets by ironing-assisted drawing method: Annual Technical Conference - ANTEC, Conference Proceedings v. 2 1995.Soc of Plastics Engineers, Brookfield, CT, p. 3094-3100.

Maerkl, A., von der Emde, M., Nowak, C., Richter, W., Zahn, D.R.T., Investigation of Se capping of epitaxial Ga//2Se//3 layers: Surface Science v. 331-333 no. pt A Jul 1 1995. p. 631-635.

Magagi, R.D., Kerr, Y.H., Temporal and spatial variabilities of surface roughness response over Hapex-Sahel area, use of ERS1 wind scatterometer: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, p. 1287-1289.

Maher, James V., Levent Kurnaz, M., Sedimentation to form rough, quasi-one-dimensional interfaces: Fractal Aspects of Materials, Materials Research Society Symposium Proceedings v. 367 1995, p. 471- 481.

Maiti, B., Gupta, P., Maiti, A.B., Chaudhuri, S., Pal, A.K., Surface morphology and optical properties of ZnS,In films: Materials Chemistry and Physics v. 39 no. 3 Jan 15 1995. p. 167-173.

Makino, Toshiro, Kaga, Kunihiko, Murata, Hidetaro, Numerical simulation on transient behavior of reflection characteristics of real surfaces of metallic materials: JSME International Journal, Series B, Fluids and Thermal Engineeringv. 38 no. 2 May 1995. p. 206-212.

Mann, Guido, Phillipps, Gerd: Rough surface absorption of Nd,YAG laser rods, Optical Materials v. 4 no. 6 Oct 1995. p. 811-814.

Mansfel'd, G.D., Bezdelkin, V.V., Freik, A.D., Kucheryavaya, E.S., Absorption of acoustic waves in langasite single crystals: Russian Ultrasonics v. 25 no. 6 1995. p. 324-332.

Mao, G., Tsao, Y.-H., Tirrell, M., Davis, H.T., Hessel, V., ingsdorf, H., Interactions, structure, and stability of photoreactive bolaformamphiphile multilayers: Langmuir v. 11 no. 3 Mar 1995. p. 942-952.

Markova, L.V., Konchits, V.V., Myshkin, N.K., Experimental studying contact metallic spots forming: Trenie i Iznos v. 16 no. 2 Mar-Apr 1995. p. 267-274.

Marshall, D.B., Shaw, M.C., Morris, W.L., Determination of interfacial properties from fiber sliding experiments, The roles of misfit anisotropy and interfacial roughness: Acta Metallurgica et Materialia v. 43 no. 5 May 1995. p. 2041-2051.

Martin, J.Y., Schwartz, Z., Hummert, T.W., Schraub, D.M., Simpson, J., ankford, J. Jr., Dean, D.D., Cochran, D.L., Boyan, B.D., Effect of titanium surface roughness on proliferation, differentiation, and protein synthesis of human osteoblast-like cells (MG63): Journal of Biomedical Materials Research v. 29 no. 3 Mar 1995. p. 389-401.

Marttila, Jouni, Korhonen, Juha, Oittinen, Pirkko, Heatset offset drying on laboratory and production scales: Paperi ja Puu/Paper and Timber v. 77 no. 3 Mar 1995. 5pp.

Marx, D., Asahi, H., Liu, X.F., Higashiwaki, M., Villaflor, A.B., iki, K., Yamamoto, K., Gonda, S., Shimomura, S., Hiyamizu, S., Low temperature etching of GaAs substrates and improved morphology of GaAs grown by metalorganic molecular beam epitaxy using trisdimethylaminoarsenic and triethylgallium: Journal of Crystal Growth v. 150 no. 1-4 pt 1 May 1 1995. p. 551-556.

Masad, J.A., On the roughness Reynolds number transition criterion: Journal of Fluids Engineering, Transactions of the ASME v. 117 no. 4 Dec1995. p. 727-729.

Masad, J.A., Malik, M.R., Link between flow separation and transition onset: AIAA Journal v. 33 no. 5 May 1995. p. 882-887.

Masad, Jamal A., Sensitivity of amplification-factor transition criterion for flow over roughness element: AIAA Journal v. 33 no. 5 May 1995. p. 947-949.

Mashal, Y.A.-H., Role of fracture mechanics parameters in glass/ceramic wear: Engineering Fracture Mechanics v. 52 no. 1 Sept 1995. p. 43-50.

Maskevich, Sergei A., Gachko, Gennedy A., Maskevich, Alexander A., trekal, Nataliya D., Fluorescence features of some organic compounds and proteins adsorbed on rough silver surfaces: Proceedings of SPIE - The International Society for Optical Engineering v. 2370 1995. Bellingham, WA, p. 131-135.

Mather, R.R., Fractal analysis of the surfaces of anisometric pigment particles: Colloids and Surfaces A, Physicochemical and Engineering Aspects v. 98, no. 3, May 22 1995. p. 191-195.

Mathew, Sunny, Mukerjee, P.S., Vijayakumar, K.P., Optical and surface properties of spray-pyrolysed CdS thin films: Thin Solid Films v. 254 no. 1-2 Jan 1 1995. p. 278-284.

Matos, Jorge, Quintela, Antonio, Flow resistance and energy dissipation in skimming flow over stepped spillways: International Water Resources Engineering Conference - Proceedings v.2 1995. ASCE, New York. p. 1121-1126.

Matsumoto, Shigeaki, Toyooka, Satoru, Laser dew-point hygrometer: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 1 Jan 1995. p. 316-320.

Matsuoka, Hironori, Katsuki, Akira, Ono, Hajime, Tsuda, Yoshihiro, Effect of Ca sulfonates as EP additives in cutting oil on tool wear in continuous and intermittent cutting: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 587 July 1995. p. 3136-3142.

Matsuoka, Hironori, Katsuki, Akira, Ono, Hajime, Tsuda, Yoshihiro, Effect of alcohol in preventing hob wear: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 585 May 1995. p. 2070-2077.

Matsuoka, Hironori, Katsuki, Akira, Ono, Hajime, Tsuda, Yoshihiro, Influence of viscosity of base oil on effect of additive in cuttingoil for hobbing: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 581 Jan 1995. p. 273-280.

Matsushita, N., Noma, K., Nakagawa, S., Naoe, M., Co-Zn ferrite rigid disks prepared by plasma-free sputtering at low substrate temperature: IEEE Transactions on Magnetics v. 31 no. 6 pt 1 Nov 1995. p. 2779-2781.

Mattox, Donald M., Substrates for tribological coatings: Plating and Surface Finishing v. 82 no. 4 Apr 1995. p. 74-75.

Mayeur, C., Sainsot, P., Flamand, L., Numerical elastoplastic model for rough contact: Journal of Tribology, Transactions of the ASME v. 117 no. 3 Jul 1995. p. 422-429.

Mazeran, P.-E., Loubet, J.-L., Martelet, C., Theretz, A., Under buffer SFM observation of immunospecies adsorbed on a cyanografted silicon substrate: Ultramicroscopy v. 60 no. 1 Aug 1995. p. 33-40.

Mazzanti, G., Montanari, G.C., Motori, A., Anelli, P., Comparison of electrical aging tests on EPR-insulated minicables and ribbons from full-sized EPR cable: IEEE Transactions on Dielectrics and Electrical Insulation v. 2 no. 6, Dec 1995. p. 1095-1099.

McCulloch, D.J., Brotherton, S.D., Surface roughness effects in laser crystallized polycrystalline silicon: Applied Physics Letters v. 66 no. 16 Apr 17 1995. p. 2060-2062.

McNicol, A., Dowson, D., Davies, M., Effect of humidity and electrical fields upon the wear of high density polyethylene and polytetrafluoroethylene: Wear v. 181-183 no. 2 Mar 1995. p. 603-612.

Meeks, Steven W., Weresin, Walter E., Rosen, Hal J., Optical surface analysis of the head-disk-interface of thin film disks: Journal of Tribology, Transactions of the ASME v. 117 no. 1 Jan 1995. p. 112-118.

Meinel, K., Beckmann, A., Klaua, M., Bethge, H., Dependence of quantum-well features in photoemission on film quality: Physica Status Solidi (A) Applied Research v. 150 no. 1 Jul 1995. p. 521- 530.

Melville, B.W., Parola, A., Need for additional abutment scour research: International Water Resources Engineering Conference - Proceedings v.2 1995. ASCE, New York. p. 1239-1243.

Mendeleev, V. Ya., Limits of applicability of the Bouguer model for analyzing the optical reflective characteristics of rough metal surfaces: Journal of Optical Technology v. 62 no. 2 Feb 1995. p. 88-91.

Mendeleev, V.Ya., Skovorod'ko, S.N., Remote laser tester of surface roughness: Steklo i Keramika no. 3 Mar 1995. p. 25-27.

Meng, Yan, Matsui, Masahiro, Hibi, Kazuki, Analytical model for simulation of the wind field in a typhoon boundary layer: Journal of Wind Engineering and Industrial Aerodynamics v. 56 no. 2-3 May 1995. p. 291-310.

Meyer, J.R., Harris, K.A., Yanka, R.W., Mohnkern, L.M., Reisinger,.R., Egler, J.F., Mahalingam, K., Otsuka, N., Investigation of monolayer roughness in HgTe-CdTe superlattices: Journal of Electronic Materials v. 24 no. 5 May 1995. p. 707-712.

Min, Shi Wei, Lim, S.P., Lee, K.S., Fractal surface and its measurement by computer simulation: Optics and Laser Technology v. 27 no. 5 Oct 1995. p. 331-333.

Mineshige, Atsushi, Inaba, Minoru, Ogumi, Zempachi, Takahashi, adayoshi, Kawagoe, Tomoo, Tasaka, Akimasa, Kikuchi, Kenji, Preparation of yttria-stabilized zirconia microtube by electrochemical vapor deposition: Journal of the American Ceramic Society v. 78 no. 11 Nov 1995. p. 3157-3159.

Ming, Z.H., Huang, S., Soo, Y.L., Kao, Y.H., Carns, T., Wang, K.L., Variations of interfacial roughness with epilayer thickness and scaling behavior in Si//1// minus //xGe//x grown on Si(100) substrates: Fractal Aspects of Materials, Materials Research Society Symposium Proceedings v. 367, 1995, p. 311- 316.

Mishkevich, Victor, Scale and roughness effects in ship performance from the designer'sviewpoint: Marine Technology v. 32 no. 2 Apr 1995. p. 126-131.

Misra, R.D.K., Ha, T., Kadmon, Y., Powell, C.J., Stiles, M.D., cMichael, R.D., Egelhoff, W.F. Jr., STM studies of GMR spin valves: Magnetic Ultrathin Films Multilayers and Surfaces, Materials Research Society Symposium Proceedings v. 384 1995. Pittsburgh, PA, p. 373-383.

Mitsuya, Yasunaga, Deng, Zhisheng, Ohka, Masahiro, Perturbation solution to dynamic molecular gas lubrication problem incurring surface roughness effects by using finite-element method: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 587 July 1995. p. 3076-3084.

Mitsuya, Yasunaga, Koumura, Tetsushi, Transient response solution applying ADI scheme to Boltzmann flow- modified Reynolds equation averaged with respect to surface roughness: Journal of Tribology, Transactions of the ASME v. 117 no. 3 Jul 1995. p. 430-436.

Miyazawa, Hajime, Miyake, Shojiro, Miyazaki, Toshiyuki, Watanabe, huichi, Murakawa, Masao, Basic study on laser-assisted thermochemical processing of diamond: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 3 Mar 1995. p. 415-419.

Miyoshi, Takashi, Takaya, Yasuhiro, Saito, Katsumasa, Nanometer measurement of silicon wafer surface texture based on Fraunhofer diffraction pattern: CIRP Annals - Manufacturing Technology v. 44 no. 1 1995. p. 489-492.

Mochizuki, Shinsuke, Osaka, Hideo, Large-eddy structure of d-type rough wall boundary layer manipulated with longitudinal thin ribs (two-point triple velocity correlation function and diffusion terms): Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B v. 61 no. 587 July 1995. p. 2379-2386.

Moel, A., Gomei, Y., Sugihara, S., Takigami, Y., Effect of an Al//2O//3 interlayer on linewidth control in electron beam writing on tungsten substrates: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 3 May-Jun 1995. p. 1058-1060.

Mohammadi, S., Wictorin, L., Ericson, L.E., Thomsen, P., Cast titanium as implant material: Journal of Materials Science, Materials in Medicine v. 6 no. 8 Aug 1995.p. 435-444.

Molaei, Masoud, Effect of cold work and heat treating on the formation of brittle alloy layer during hot dipped galvanizing: Proceedings of the Annual Convention of the Wire Association International 1995. Wire Assoc Int Inc, Guilford, CT, p. 60-65.

Montgomery, J.S., Barnak, J.P., Silvestre, C., Hauser, J.R., emanich, R.J., Correlation of roughness and device properties for hydrogen plasma cleaning of Si(100) prior to gate oxidation: Ultraclean Semiconductor Processing Technology and Surface Chemical Cleaning and Passivation, Materials Research Society Symposium Proceedings v. 386, 1995. Pittsburgh, PA, p. 279-284.

Morawe, Ch., Zabel, H., Metal/Al//2O//3 multilayers as high-temperature x-ray mirrors: Structure and Properties of Multilayered Thin Films, Materials Research Society Symposium Proceedings v. 382 1995, p. 363-368.

Moreau, C., Gougeon, P., Lamontagne, M., Influence of substrate preparation on the flattening and cooling of plasma-sprayed particles: Journal of Thermal Spray Technology v. 4 no. 1 Mar 1995. p. 25-33.

Morin, V., Angogna, A., Sabater, J., Enri, D., Le Nest, J.F., CTP develops a method of measuring gloss on-line: Paper Technology v. 36 no. 2 Mar 1995. p. 37-45.

Morishita, Shunsuke, Uchida, Yasutaka, Matsumura, Masakiyo, Atomic-layer chemical-vapor-deposition of SiO//2 by cyclic exposures of CH//3OSi(NCO)//3 and H//2O//2: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 10 Oct 1995. p. 5738-5742.

M'saad, Hichem, Michel, Jurgen, Reddy, A., Kimerling, L.C., Monitoring and optimization of silicon surface quality: Journal of the Electrochemical Society v. 142 no. 8 Aug 1995. p. 2833- 2835.

Mumm, D.R., Faber, K.T., Interfacial debonding and sliding in brittle-matrix composites measured using an improved fiber pullout technique: Acta Metallurgica et Materialia v. 43 no. 3 Mar 1995. p. 1259-1270.

Munkholm, A., Brennan, S., Goodbread, Jon P., Wafer cleaning influence on the roughness of the Si/SiO//2 interface: Ultraclean Semiconductor Processing Technology and Surface Chemical Cleaning and Passivation, Materials Research Society Symposium Proceedings v. 386,1995. Pittsburgh, PA, p. 303-307.

Musil, J., Matous, J., Valvoda, V., Effect of ion bombardment on the surface morphology of Zn-films sputtered in an unbalanced magnetron: Vacuum v. 46 no. 2 Feb 1995. p. 203-210.

Mutter, R., Stuehn, B., Static and kinetic aspects of the ordering transition in thin films of diblock copolymers: Macromolecules v. 28 no. 14 Jul 3 1995. p. 5022-5028.

Myli, Kari B., Grassian, Vicki H., Effect of surface roughness on surface photochemistry: Beam-Solid Interactions for Materials Synthesis and Characterization, Materials Research Society Symposium Proceedings v. 354, 1995, p. 555-560.

Nagase, Y., Sawaki, Y., Moritake, F., Yoshida, H., Fatigue gage utilizing surface roughening of aluminum foil: Journal of Engineering Materials and Technology, Transactions of the ASME v. 117 no. 1 Jan 1995. p. 55-61.

Nagata, Hitoshi, Yamaguchi, Atsumi, Kawai, Akira, Characterization of thin-film interference effect due to surface roughness: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 7A July 1995. p. 3754-3758.

Naito, Kimiyoshi, Fujii, Toru, Fractals for fractured surfaces of adhesives under static and fatigue loadings: International Journal of Adhesion and Adhesives v. 15 no. 3 Jul 1995. p. 123-130.

Nakai, Hironori, Ino, Nobumi, Hashimoto, Hiromu, Piston-ring lubrication problems with surface roughness effects for refrigeration compressor (1st report, in the case of flooded lubrication conditions): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 586 Jun 1995. p. 360-366.

Nakajima, Katsuhiko, Thermal contact resistance between balls and rings of a bearing underaxial, radial, and combined loads: Journal of Thermophysics and Heat Transfer v. 9 no. 1 Jan-Mar 1995. p. 88- 95.

Nakamura, T., Asakura, T., First-order phase statistics of Gaussian speckles produced in the diffraction field by ellipsoidal rough surfaces: Optik (Stuttgart) v. 100 no. 4 Oct 1995. p. 171-178.

Nakamura, Takanori, Yamanaka, Yasuhiro, Morimoto, Akiharu, Shimizu, atsuo, Effect of oxygen pressure on (Ba//xSr//1// minus //x)TiO//3 thin films by pulsed laser ablation: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 9B Sep 1995. p. 5150-5153.

Nakano, H., Matsuda, Y., Shin, S., Nagai, S., Optical detection of ultrasound on rough surfaces by a phase-conjugate method: Ultrasonics v. 33 no. 4 Jul 1995. p. 261-264.

Nakazono, Hiroshi, Yasui, Heiji, Hosokawa, Akira, Kurusu, Makoto, awashita, Tomoyuki, Studies on dressing of resin bond CBN wheel (5th Report) - durability against grinding process of high dense cutting edge distribution and sharpwheel edge formed by SLAD method: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 7 July 1995. p. 991-995.

Nam, Soo Woo, Lee, Soo Chan, Lee, Je Min, Effect of creep cavitation on the fatigue life under creep-fatigue interaction: Nuclear Engineering and Design v. 153 no. 2-3 Jan 1995. p. 213-221.

Namba, Yoshiharu, Saeki, Morihiko, Sasaki, Takatomo, Goto, Yoshitaka, Precision grinding of organic nonlinear optical crystals: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 6 1995. p. 814-818.

Namba, Yoshiharu, Saeki, Morihiko, Sasaki, Takatomo, Goto, Yoshitaka, Single point diamond turning of chalcone organic nonlinear optical crystals for second harmonic generation: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 10 Oct 1995. p. 1423-1427.

Nandhakumar, I.S., Li, Z.Y., Palmer, R.E., Amos, R., LEED and resonance EELS study of the (NO)//2 dimer on graphite: Surface Science v. 329 no. 3 May 20 1995. p. 184-192.

Nandhakumar, N., Malik, S., Multisensor integration for underwater scene classification: Applied Intelligence v. 5 no. 3 Jul 1995. p. 207-216.

Narahara, Hiroyuki, Saito, Katsumasa, Study on the improvement of surface roughness of complex model created by three dimensional photofabrication (1st report) - proposal of lift up irradiation method: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 2 Feb 1995. p. 233-237.

Narayanan, Ram M., Jackson, Sandy R., St. Germain, Karen M., Estimation of surface snow properties using combined near-infrared reflectance and millimeter-wave backscatter: Combined Optical-Microwave Earth and Atmosphere Sensing - Conference Proceedings 1995. IEEE, Piscataway, NJ, p. 189-191.

Natarajan, V.V.R., Hunt, M.L., Taylor, E.D., Local measurements of velocity fluctuations and diffusion coefficients for a granular material flow: Journal of Fluid Mechanics v. 304 Dec 10 1995. p. 1-25.

Nazmeev, Yu.G., Konakhin, A.M., Kumirov, B.A., Olimpiev, V.V., hinkevich, O.P., Heat transfer and hydraulic resistance, with a pulsating laminary flow of a viscous liquid in tubes with artificial roughness: Teploenergetika no. 3 Mar 1995. p. 61-63.

Neal, Brian L., Lenhoff, Abraham M., Excluded volume contribution to the osmotic second virial coefficient for proteins: AIChE Journal v. 41 no. 4 Apr 1995. p. 1010-1014.

Nee, Soe-Mie F., Polarization characterization for target surfaces: Proceedings of SPIE - The International Society for Optical Engineering v. 2469 1995. Bellingham, WA, p. 220-230.

Neglinskij, V.V., Generalization of experience results for wearing locomotive wheel couple flanges: Trenie i Iznos v. 16 no. 1 Jan-Feb 1995. p. 119-125.

Nesladek, M., Vandierendonck, K., Quaeyhaegens, C., Kerkhofs, M., tals, L.M., Adhesion of diamond coatings on cemented carbides: Thin Solid Films v. 270 no. 1-2 Dec 1 1995. p. 184-188.

Nesti, G., Pampaloni, P., Coppo, P., Hallikainen, M., Mancini, M., roch, P., von Shonermark, M., Experimental research at the EMSL on scattering properties of nonvegetated terrains: International Geoscience and Remote Sensing Symposium (IGARSS) v. 3, 1995. IEEE, Piscataway, NJ, p. 2020-2022.

Nesti, G., Tarchi, D., Rudant, J.-P., Decorrelation of backscattered signal due to soil moisture changes: International Geoscience and Remote Sensing Symposium (IGARSS) v. 3, 1995. IEEE, Piscataway, NJ, p. 2026-2028.

Ngan, Ken, Material properties of coherent TiN films: Materials Reliability in Microelectronics V, Materials Research Society Symposium Proceedings v. 391 1995. Pittsburgh, PA, p. 217-222.

Nghiem, S.V., Li, Fuk K., Lou, Shu-hsiang, Neumann, Gregory, clntosh, Robert E., Carson, Steven C., Carswell, James R., Walsh, Edward J., onelan, Mark A., Drennan, William M., Observations of radar backscatter at Ku and C bands in the presence of large waves during the surface wave dynamics experiment: IEEE Transactions on Geoscience and Remote Sensing v. 33 no. 3 May 1995.p. 708-721.

Nikolaev, V.A., Kudrin, V.I., Tilik, V.T., Telyuk, V.G., Cold rolling of strips in the working rolls of various diameters: Stal' no. 6 June 1995. p. 39-41.

Nikolaev, V.A., Rusakov, A.D., Bochkov, V.V., Additional requirements for quality of surfaces of rolls for microband: Stal' no. 6 June 1995. p. 49-51.

Nishihara, T., Shinohara, M., Ishiyama, O., Ohtani, F., Yoshimoto, M., aeda, T., Koinuma, H., Determination of atomic plane on InP (001) surface by CAICISS: IEEE Intl. Conf. on Indium Phosphide and Related Materials 1995. IEEE, Piscataway, NJ, p. 233-236.

Nishino, Koichi, Yamashita, Shigemasa, Torii, Kahoru, Thermal contact conductance under low applied load in a vacuum environment: Experimental Thermal and Fluid Science v. 10 no. 2 Feb 1995. p. 258-271.

Nishioka, Takao, Ito, Yasushi, Yamamoto, Takehisa, Yamakawa, Akira, iyake, Masaya, Tanaka, Yoshio, Surface grinding characteristics of Si//3N//4 ceramics under high- speed and speed-stroke grinding conditions: Nippon Seramikkusu Kyokai Gakujutsu Ronbunshi/Journal of the CeramicSociety of Japan v. 103 no. 1204 Dec 1995. p. 1238-1242.

Nitta, Isami, Measurements of real contact areas using PET films (thickness, 0.9 mum): Wear v. 181-183 no. 2 Mar 1995. p. 844-849.

Noever, D.A., Nikora, V.I., Rarefied solids: Microgravity Science and Technology v. 7 no. 4 Feb 1995. p. 343-347.

Noh, D.Y., Liang, K.S., Hwu, Y., Chandavarkar, S., Thermal roughness of a Si(331) surface: Surface Science v. 326 no. 1-2 Mar 10 1995. p. L455-L459.

Nomura, Y., Wakasa, K., Yamaki, M., Effect of magnesia content on expansion, strength and roughness in dental ethyl silicate-bonded investment: Journal of Materials Science Letters v. 14 no. 19 Oct 1 1995. p. 1380- 1382.

Norgard, C., Eskildsen, S.S., Matthews, A., Influence of oriented growth on the surface roughness of CVD diamond films: Surface & Coatings Technology v. 74-75 no. 1-3 Sept 1995. p. 358-361.

Norman, Bo, Model experiments of wet pressing: International Paper Physics Conference, Proceedings 1995. p. V17.

Nowak, Andrzej S., Calibration of LRFD bridge code: Journal of Structural Engineering v. 121 no. 8 Aug 1995. p. 1245-1251.

Nowak, M., Determination of optical constants and average thickness of inhomogeneous-rough thin films using spectral dependence of optical transmittance: Thin Solid Films v. 254 no. 1-2 Jan 1 1995. p. 200-210.

Oda, Tetsuji, Wang, Shinan, Charging of HDPE film due to surface effects during fabrication: Journal of Electrostatics v. 35 no. 2-3 Aug 1995. p. 167-177.

Oehr, Klaus H., Roth, Reinhold, Cleaning steel wire without acid: Proceedings of the Annual Convention of the Wire Association International 1995. Wire Assoc Int Inc, Guilford, CT, p. 66-69.

Ofner, H., Ulrych, I., Chab, V., Netzer, F.P., Matthew, J.A.D., Electronic structure of the laser-annealed Si(111)1 X 1 surface: Surface Science v. 327 no. 3 Apr 10 1995. p. 233-240.

Ogawa, Haruo, Takahashi, Yuichiro, Inahashi, Jun, Senga, Toru, Metal injection molding (MIM) processing for micro structures, part 1-vibrational processing to improve the surface roughness of the forming molds: IEICE Transactions on Electronics v. E78-C no. 2 Feb 1995. p. 162-166.

Oh, Yisok, Sarabandi, Kamal, Ulaby, Fawwaz T., Development of a semi-empirical polarimetric scattering model for microwave radar observations from bare soil surfaces: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, p. 939-941.

Ohguro, T., Nakamura, S., Morifuji, E., Ono, M., Yoshitomi, T., aito, M., Momose, H.S., Iwai, H., Nitrogen-doped nickel monosilicide technique for deep submicron CMOSsalicide: Technical Digest - International Electron Devices Meeting 1995. IEEE, Piscataway, NJ, p. 453-456.

Ohlidal, M., Ohlidal, I., Druckmuller, M., Franta, D., Method of shearing interferometry for determining the statistical quantities of randomly rough surfaces of solids: Pure and Applied Optics, Journal of the European Optical Society PartA v. 4 no. 5 Sep 1995. p. 599-616.

Oishi, K., Built-up edge elimination in mirror cutting of hardened steel: Journal of Engineering for Industry, Transactions of the ASME v. 117 no.1 Feb 1995. p. 62-66.

Okazaki, Yutaka, Samoto, Tetsuo, Effect of magnetic layer thickness on the digital recording performance of metal particulate tape: IEEE Transactions on Magnetics v. 31 no. 6 pt 1 Nov 1995. p. 2889-2891.

Olimpiev, V.V., Relaxation of the internal boundary layer behind a low obstacle in the channel: Teploenergetika no. 4 Apr 1995. p. 66-70.

Onikura, Hiromichi, Kuwabara, Yoshiharu, Nakamura, Taizo, Sajima, akao, Imaseki, Yoshiro, Katsuki, Akio, Yamada, Seiji, Development of an optical hole-diameter measuring instrument - optical analysis, fundamental experiment, trial manufacture and performance test: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 2 Feb 1995. p. 248-252.

Ono, Kyosuke, Yamamura, Hiroshi, Mizokoshi, Takaaki, Computer analysis of the dynamic contact behavior and tracking characteristics of a single-degree-of-freedom slider model for a contact recording head: Journal of Tribology, Transactions of the ASME v. 117 no. 1 Jan 1995. p. 124-129.

Onoda, Hiroshi, Touchi, Kenshin, Hashmoto, Keiichi, Effects of insulator surface roughness on Al-alloy film crystallographic orientation in Al-alloy/Ti/insulator structure: Japanese Journal of Applied Physics, Part 2, Letters v. 34 no. 8B Aug 15, 1995. p. L1037-L1040.

Onstott, Robert G., Perlin, Marc, Lin, Huanjay, Prediction of radar backscatter for gravity-capillary waves with precise spatial and temporal measurements: International Geoscience and Remote Sensing Symposium (IGARSS) v. 3, 1995. IEEE, Piscataway, NJ, 5CH35770. p. 1878-1880.

Oppenheim, Uri P., Feiner, Yoram, Polarization of the reflectivity of paints and other rough surfaces in the infrared: Applied Optics v. 34 no. 10 Apr 1 1995. p. 1664-1671.

Oren, Michael, Nayar, Shree K., Generalization of the Lambertian model and implications for machine vision: International Journal of Computer Vision v. 14 no. 3 Apr 1995. p. 227-251.

Oshima, Toshio, Zhang, You-Lin, Hirota, Mitsuaki, Suzuki, Michitaka, akagawa, Takeshi, Effect of the types of mill on the flowability of ground powders: Advanced Powder Technology v. 6 no. 1 1995. p. 35-45.

Ostand, Paul R., Minimizing piping friction losses in low-pressure regulating valves: Control Engineering v. 42 no. 2 Feb 1995. p. 101-102.

Ottosson, Mikael, Lu, Jun, Carlsson, Jan-Otto, Chemical vapour deposition of Cu//2O on MgO(100) from CuI and N//2O, aspects of epitaxy: Journal of Crystal Growth v. 151 no. 3-4 Jun 1 1995. p. 305-311.

# 1995 P-R

Pace, M.O., McCorkle, D.L., Waymel, X., Possible high pressure nitrogen-based insulation for compressed gas insulated cables: Conference on Electrical Insulation and Dielectric Phenomena (CEIDP), nnual Report 1995. IEEE, Piscataway, NJ, 5CH35842. p. 195-198.

Pachepsky, Ya. A., Polubesova, T.A., Hajnos, M., Sokolowska, Z., ozefaciuk, G., Fractal parameters of pore surface area as influenced by simulated soil degradation: Soil Science Society of America Journal v. 59 no. 1 Jan-Feb 1995. p. 68- 75.

Pal, R., Chattopadhyay, K.K., Chaudhuri, S., Pal, A.K., Effect of etching on the surface morphology and grain boundary parameters of Cu-rich CuInSe//2 films: Thin Solid Films v. 254 no. 1-2 Jan 1 1995. p. 111-115.

Pal, R., Maiti, B., Chaudhuri, S., Pal, A.K., ZnSe films, Preparation and properties: Vacuum v. 46 no. 11 Nov 1995. p. 1255-1260.

Pancewicz, Tomasz, Determination of the geometry of the oil gap between two rough surfaces in contact: Measurement, Journal of the International Measurement Confederation v.16 no. 1 Sep 1995. p. 59-63.

Papagiannakis, A.T., Gujarathi, M.S., Roughness model describing heavy vehicle-pavement interaction: Transportation Research Record no. 1501 Jul 1995. p. 50-59.

Paris, Oskar, Langmyar, Franz, Vogl, Gero, Fratzl, Peter, Possible criterion for slowing down of precipitate coarsening due to elastic misfit interactions: Zeitschrift für Metallkunde v. 86 no. 12 Dec 1995. p. 860-863.

Park, Dongkyu, Keszler, Balazs, Galiatsatos, Vassilios, Kennedy, Joseph P., Ratner, Buddy D., Amphiphilic networks. 9. Surface characterization: Macromolecules v. 28 no. 8 Apr 10 1995. p. 2595-2601.

Park, S.K., Je, Jung Ho, Resputtering of the superconducting Bi-Sr-Ca-Cu-O thin films: Physica C, Superconductivity v. 254 no. 1-2 Nov 10 1995. p. 167-174.

Park, Tae-Hoon, Ko, Yong-Sun, Shim, Tae-Earn, Lee, Jong-Gil, Kim, oung-Kwan, Cleaning effects of HF-HNO//3-H//2O//2 system: Journal of the Electrochemical Society v. 142 no. 2 Feb 1995. p. 571-576.

Parmeter, J.E., Petersen, G.A., Smith, P.M., Apblett, C.A., Reid,.S., Norman, J.A.T., Hochberg, A.K., Roberts, D.A., Omstead, Thomas R., Characterization of thin copper films grown via chemical vapor deposition using liquid coinjection of trimethylvinylsilane and (hexafluoroacetylacetonate) Cu (trimethylvinylsilane): Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 1 Jan-Feb 1995. p. 130-136.

Parmeter, J.E., Shul, R.J., Miller, P.A., In situ Auger spectroscopy investigation of InP surfaces treated in RFhydrogen and hydrogen/methane/argon plasmas:

Ultraclean Semiconductor Processing Technology and Surface Chemical Cleaning and Passivation, Materials Research Society Symposium Proceedings v. 386, 1995, p. 309-314.

Paro, J., Nieminen, I., Kauppinen, V., High-speed milling in tooling production: Journal of Materials Processing Technology v. 52 no. 1 May 1995. p. 27-34.

Pashkevich, M.F., Approximation of ball reducer parts wear: Trenie i Iznos v. 16 no. 2 Mar-Apr 1995. p. 253-260.

Pasquarell, G.C., Granular flows, Steady planar chute flow within slightly bumpy walls: Journal of Engineering Mechanics v. 121 no. 3 Mar 1995. p. 406-413.

Patel, V.C., Yoon, J.Y., Application of turbulence models to separated flow over rough surfaces: Journal of Fluids Engineering, Transactions of the ASME v. 117 no. 2 Jun1995. p. 234-241.

Pecorari, Claudio, Mendelsohn, Daniel A., Adler, Laszlo, Ultrasonic wave scattering from rough, imperfect interfaces. Part II. Incoherent and coherent scattered fields: Journal of Nondestructive Evaluation v. 14 no. 3 Sep 1995. p. 117-126.

Pecorari, Claudio, Mendelsohn, Daniel A., Adler, Laszlo, Ultrasonic wave scattering from rough, imperfect interfaces. Part I.Stochastic interface models: Journal of Nondestructive Evaluation v. 14 no. 3 Sep 1995. p. 109-116.

Pecz, B., Frangis, N., Logothetidis, S., Alexandrou, I., Barna, P.B., toemenos, J., Electron microscopy characterization of TiN films on Si, grown by d.c.reactive magnetron sputtering: Thin Solid Films v. 268 no. 1-2 Nov 1 1995. p. 57-63.

Pelosi, G., Toso, G., Coccioli, R., Scattering from inhomogeneous media with rough interface illuminated by a pencil-beam, a hybrid perturbative - finite elements approach: International Geoscience and Remote Sensing Symposium (IGARSS) v. 3, 1995. IEEE, Piscataway, NJ, p. 1708-1710.

Pengra, David B., Shi, Liang, Xi Li, Sidney, Wong, Po-Zen, Experimental study of electrokinetics in porous media: Dynamics in Small Confining Systems II, Materials Research Society Symposium Proceedings v. 366 1995. Materials Research Society, p. 201-206.

Pennati, G.P., Surface energy balance estimates in the PO river plain using landsatTM, NOAA AVHRR and metereological data: International Geoscience and Remote Sensing Symposium (IGARSS) v. 1, 1995, p. 522-524.

Perry, W. Lee, Jain, A., Kodas, T.T., Hampden-Smith, M.J., Selective chemical vapor deposition on excimer-laser-patterned polytetrafluoroethylene from hexafluoroacetylacetonate copper (I)vinyltrimethylsilane: Thin Solid Films v. 262 no. 1-2 Jun 15 1995. p. 7-11.

Peters, P.W.M., Martin, E., Quenisset, J.M., Slip and frictional shear stresses in ceramic matrix composites: Journal of Composite Materials v. 29 no. 5 1995. p. 550-572.

Pfeiffer, G., Fetheroff, S., Iyer, S.S., Final polish for SOI wafers - surface roughness and TTV degradation: IEEE International SOI Conference 1995. IEEE, Piscataway, NJ, 5CH35763. p. 172-173.

Philpott, M.L., Mitchell, S.E., Tobolski, J.F., Green, P.A., Simultaneous in-process inspection of surface form and roughness of machined sculptured surfaces: Journal of Engineering for Industry, Transactions of the ASME v. 117 no.3 Aug 1995. p. 430-438.

Piggott, M.R., New model for interface failure in fibre-reinforced polymers: Composites Science and Technology v. 55 no. 3 1995. p. 269-276.

Pleskachevsky, Yu.M., Zaitsev, A.L., Smirnov, V.V., Oxidation and its influence on low pressure polyethylene wear: Wear v. 181-183 no. 1 Feb 1995. p. 222-226.

Podczeck, F., Newton, J.M., James, M.B., Assessment of particle friction of a drug substance and a drug carrier substance: Journal of Materials Science v. 30 no. 23 Dec 1 1995. p. 6083-6089.

Pokladij, G.G., Kovyzhenko, G.I., Rabinovich, E.S., Machining heat treated high-temperature steels and titanium alloy by diamond tool containing elastic binders: Sverkhtverdye Materialy no. 1 Jan-Feb 1995. p. 48-51.

Polijaniuk, A., New approach to the problem of bearing for rough surfaces under quasistatic load: Wear v. 184 no. 1 Apr 1995. p. 55-60.

Polycarpou, Andreas A., Soom, Andres: Boundary and mixed friction in the presence of dynamic normal loads, part II - friction transients: Journal of Tribology, Transactions of the ASME v. 117 no. 2 Apr 1995. p. 261-266.

Poon, Chin Y., and Bhushan, Bharat, Surface roughness analysis of glass-ceramic substrates and finished magnetic disks, and Ni-P coated Al-Mg and glass substrates: Wear v. 190 no. 1 Nov 1995. p. 89-109.

Poon, Chin Y., and Bhushan, Bharat, Comparison of surface roughness measurements by stylus profiler, AFM and non-contact optical profiler: Wear v. 190 no. 1 Nov 1995. p. 76-88.

Poullikkas, Andreas, Surface roughness effects on induced flow and frictional resistance of enclosed rotating disks: Journal of Fluids Engineering, Transactions of the ASME v. 117 no. 3 Sep1995. p. 526-528.

Praisner, Thomas J., Chen, Jim S.-J., Tseng, Ampere A., Experimental study of process behavior in planar flow melt spinning: Metallurgical and Materials Transactions B, Process Metallurgy and Materials Processing Science v. 26 no. 6 Dec 1995. p. 1199-1208.

Prakash, Vikas, Pressure-shear plate impact experiment for investigating transient friction: Experimental Mechanics v. 35 no. 4 Dec 1995. p. 329-336.

Pranevicius, L., Badawi, K.-F., Durand, N., Delafond, J., Templier, Surface roughening resulting from ion irradiation of multilayered materials: Vacuum v. 46 no. 1 Jan 1995. p. 77-84.

Prat, M., Schmitz, P., Poulikakos, D., On the effect of surface roughness on the vapor flow under Leidenfrost- Levitated droplets: Journal of Fluids Engineering, Transactions of the ASME v. 117 no. 3 Sep1995. p. 519-525.

Pravica, D.W., Model for the effect of roughness on the load capacity of journal bearings: Quarterly of Applied Mathematics v. 53 no. 3 Sep 1995. p. 563-573.

Premus, V., Alexandrou, D., Maximum a-posteriori probability estimation of seafloor microroughness parameters from backscatter spatial coherence: Special Sessions ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings v. 5 1995. IEEE, Piscataway, NJ, p. 3119-3122.

Pupyshev, N.N., Rodionov, V.B., Fedosov, V.R., Spillway gates of the Kaganda water power development project: Gidrotekhnicheskoe Stroitel'stvo no. 9 Sept 1995. p. 54-56.

Puthanangady, T.K., Malkin, S., Experimental investigation of the superfinishing process: Wear v. 185 no. 1-2 Jun 1995. p. 173-182.

Pynn, Roger, What can we learn from off-specular neutron reflection?: Neutron Scattering in Materials Science II, Materials Research Society Symposium Proceedings v. 376 1995. Pittsburgh, PA, p. 165-173.

Qian, W., Skowronski, M., Augustine, G., Glass, R.C., Hobgood, H.McD., Hopkins, R.H., Characterization of polishing-related surface damage in (0001) silicon carbide substrates: Journal of the Electrochemical Society v. 142 no. 12 Dec 1995. p. 4290-4294.

Queiroga, Reinaldo Heitor Batista, dos Santos, Ricardo Jose Macedo, antos, Dagoberto Brandao, Influence of cooling conditions of steel wire rod on scale formation and its application on mechanical descaling: Wire Journal International v. 28 no. 10 Oct 1995. p. 56-63.

Raadnui, S., Roylance, B.J., Classification of wear particle shape: Lubrication Engineering v. 51 no. 5 May 1995. p. 432-437.

Rakels, Jan H., Influence of surface skewness on the zero-order light scatter for agiven roughness: Proceedings of SPIE - The International Society for Optical Engineering v. 2576 1995. Bellingham, WA, p. 131-136.

Ramesh, J., Majumdar, B.C., Rao, N.S., Non-linear transient analysis of submerged oil journal bearings considering surface roughness and thermal effects: Proceedings of the Institution of Mechanical Engineers, Part J, Journal of Engineering Tribology v. 209 no. 1 1995. p. 53-61.

Rana, Didier, Webster, Alan R., Sylvain, Michel, Surface reflection at low-angle propagation: IEEE Transactions on

Antennas and Propagation v. 43 no. 7 Jul 1995. p. 639-652.

Rao, M.V.H., Mathur, B.K., Chopra, K.L., Scanning tunnelling microscopy studies of nucleation and growth of silver films: Journal of Materials Science v. 30 no. 10 May 15 1995. p. 2682-2685.

Rappich, J., Aggour, M., Rauscher, S., Lewerenz, H.J., Jungblut, H., Electrochemical surface conditioning of no.-Si(111): Surface Science v. 335 no. 1-3 Jul 20 1995. p. 160-165.

Rappich, J., Lewerenz, H.J., Electrochemical and electronic passivation by hydrogenation of no.- Si(111): Materials Science Forum v. 185-188 1995. p. 83-90.

Rashed, Mahbub, Shih, W.-K., Jallepalli, S., Kwan, T.J.T., Maziar,.M., Monte Carlo simulation of electron transport in strained Si/Si//1//minus //xGe//x no.-MOSFETs: Technical Digest - International Electron Devices Meeting 1995. IEEE, Piscataway, NJ, p. 765-768.

Raviguruaran, T.S., Bergles, A.E., Prandtl number influence on heat transfer enhancement in turbulent flow of water at low temperatures: Journal of Heat Transfer, Transactions ASME v. 117 no. 2 May 1995. p. 276- 282.

Rebollo, M.A., Landau, M.R., Hogert, E.N., Gaggioli, N.G., Muramatsu, Roughness determination by direct visual observation of the speckle pattern: Optics and Laser Technology v. 27 no. 6 Dec 1995. p. 355-356.

Reichert, G., Ouisse, T., Pelloie, J.L., Cristoloveanu, S., Surface mobility of SOI MOSFET's in the high temperature range, modelling and experiment: IEEE International SOI Conference 1995. IEEE, Piscataway, NJ, p. 42-43.

Reinker, B., Moske, M., Geisler, H., Samwer, K., Surface topography of cocondensed amorphous Zr-Co-alloy films investigated in situ by UHV-STM: Evoluation of Thin Film and Surface Structure and Morphology, Materials Research Society Symposium Proceedings v. 355 1995, p. 601-606.

Reisse, G., Weissmantel, S., Keiper, B., Steiger, B., Johansen, H., artini, T., Scholz, R., Influence of ion bombardment on the refractive index of laser pulse deposited oxide films: Applied Surface Science v. 86 no. 1 Febr 1995. p. 107-113.

Rentsch, Rudiger, Inasaki, Ichiro, Investigation of surface integrity by molecular dynamics simulation: CIRP Annals - Manufacturing Technology v. 44 no. 1 1995. p. 295-298.

Resch-Esser, U., Esser, N., Springer, C., Zegenhagen, J., Richter, W., ardona, M., Fimland, B.O., Surface ordering on GaAs(100) by indium-termination: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 4 Jul-Aug 1995. p. 1672-1678.

Reynolds, James A., Elusive mask defects, reflectivity variations: Solid State Technology v. 38 no. 3 Mar 1995. p. 75-76.

Rezlescu, N., Iacob, Gh, Iacob, L., Badescu, V., Effect of friction with the collecting surface on the build-up mass in the axial HGMS configuration: Magnetic and Electrical Separation v. 6 no. 3 1995. p. 151-160.

Richard, C.S., Lu, J., Beranger, G., Decomps, F., Study of Cr//2O//3 coatings Part I, microstructures and modulus: Journal of Thermal Spray Technology v. 4 no. 4 Dec 1995. p. 342-346.

Riley, N.G., Carnegie, A., Measurement or radio characteristics of building surfaces to aid urban clutter modelling: Propagation IEE Conference Publication v. 2 no. 407 1995. IEE, Stevenage, UK, p. 253-257.

Robins, P.J., Austin, S.A., Unified failure envelope from the evaluation of concrete repair bond tests: Magazine of Concrete Research v. 47 no. 170 Mar 1995. p. 57-68.

Rodic, Aleksandar D., Vukobratovic, Miomir K., Contribution to the controller design in tasks of robot deburring: Mechanism & Machine Theory v. 30 no. 3 Apr 1995. p. 363-382.

Rogowski, Donald F., Identification and elimination of roughness patterns in coated products: TAPPI Journal v. 78 no. 5 May 1995. p. 189-198.

Romeo, Robert C., CFRP composites for optics and structures in telescope applications: Proceedings of SPIE - The International Society for Optical Engineering v. 2543 1995. Bellingham, WA, p. 154-161.

Ronnow, D., Anderson, S.K., Niklasson, G.A., Surface roughness effects in ellipsometry, comparison of truncated sphere and effective medium models: Optical Materials v. 4 no. 6 Oct 1995. p. 815-821.

Roth, P., Wobker, H.G., Menz, C., Surface integrity and wear behavior of ground ceramics: Tribology Transactions v. 38 no. 3 Jul 1995. p. 714-720.

Rothe, Hendrik, Multivariate estimation of the systematic error of scanning probe microscopes: Thin Solid Films v. 264 no. 2 Aug 15 1995. p. 282-290.

Rother, B., Dietrich, D.A., New valuation of the classical hardness definition and consequences for mechanical characterizations of thin films: Surface & Coatings Technology v. 74-75 no. 1-3 Sept 1995. p. 614-617.

Rudenko, O.V., Vu, Chin An, Distribution of microprotuberances of surface roughness from acoustic measurement data: Russian Ultrasonics v. 25 no. 1 1995. p. 14-19.

Rudenko, V.A., Gumantsov, V.I., Menyajlo, L.F., Gordeev, G.D., Moulding sand based on cellolignine: Liteinoe Proizvodstvo no. 7-8 July-Aug 1995. p. 26-27.

Rusnak, Ilan, Moreshet, Jair, Specular multipath from rough correlated surfaces: IEEE National Radar Conference - Proceedings 1995. IEEE, Piscataway, NJ, 5CH3571-0. p. 419-424.

Ryzhov, E.V., Lyashko, V.A., Potemkin, M.M., Relationships between the parameters of surface roughness after diamond grinding: Sverkhtverdye Materialy no. 2 Mar-Apr 1995. p. 76-78.

# 1995 S-T

Sadana, Ajit, Beelaram, Aruna M., Antigen-antibody diffusion-limited binding kinetics of biosensors, a fractal analysis: Biosensors & Bioelectronics v. 10 no. 3-4 Spring 1995. p. 301-316.

Saeki, Morihiko, Namba, Yoshiharu, Kimura, Yasuhiro, Change of machined surface properties in organic nonlinear optical crystals with time and its prevention method: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 11 Nov 1995. p. 1560-1564.

Saito, Masayoshi, Kudoh, Yutaka, Homma, Yoshio, Pressure-controlled two-step TEOS-O//3 CVD eliminating the base material effect: Digest of Technical Papers - Symposium on VLSI Technology 1995. IEEE, Piscataway, NJ, p. 43-44.

Saitoh, Shinji, Inaba, Hiroo, Kashiwagi, Akira, Developments and advances in thin layer particulate recording media: IEEE Transactions on Magnetics v. 31 no. 6 pt 1 Nov 1995. p. 2859-2864.

Sakaguchi, Kazuhiko, Matsuoka, Takashi, Araki, Hiroaki, Adachi, suneyuki, Properties of rolling-sliding friction on carbon-fiber-reinforced polyphenylene sulfide (PPS) composites: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 583 Mar 1995. p. 1117-1122.

Sakai, H., Itti, R., Yamada, Y., Shiohara, Y., Tanaka, S., Homoepitaxy of thin films using YBa//2Cu//3O//7// minus //x single- crystal substrates: Physica C, Superconductivity v. 241 no. 3-4 Jan 15 1995. p. 292-300.

Sakai, Yasuo, Yagishita, Hukuzo, Furukawa, Yuji, Study on the simulation of grinding process (2nd Report) -distribution of cutting edges on a grinding wheel surface: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 10 Oct 1995. p. 1443-1447.

Sakamoto, Hironobu, Touge, Mutsumi, Matsuo, Tetsuo, Effect of quill motion on metal removal mechanism in jig grinding: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 591 Nov 1995. p. 4523-4528.

Sakaya, Katsuaki, Kurobe, Toshiji, Hirosaki, Kenichi, Study on ultra fine NC polishing with constant cutting depth - surface polishing characteristics and influence of viscosity of polishing compound: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 8 Aug 1995. p. 1146-1150.

Sakaya, Katsuaki, Kurobe, Toshiji, Suzuki, Shigenari, Hirosaki, enichi, Study on GLP (grinding-like polishing) using magnetic fluid (FFF) -surface polishing characteristics of Si-wafer: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 11 Nov 1995. p. 1555-1559.

Salditt, Tim, Metzger, T.H., Peisl, J., Morawe, Ch., Zabel, H., Interface morphology of rf-sputtered Nb/Al//2O//3 multilayers studied by x-ray reflectivity and diffuse scattering: Evoluation of Thin Film and Surface Structure and Morphology, Materials Research Society Symposium Proceedings v. 355 1995. Pittsburgh, PA, p. 269-274.

Samitsu, Yamato, Study of atomic scale processing using an atomic force microscope: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 8 Aug 1995. p. 1121-1125.

Samitsu, Yamato, Fractal analysis of the surface roughness of the polished silicon wafers by an atomic force microscope: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 11 Nov 1995. p. 1565-1568.

Sanchez-Gil, Jose A., Anderson localization of surface electromagnetic waves on rough, perfectly conducting surfaces that are periodic on average: Optics Communications v. 118 no. 1-2 Jul 1 1995. p. 14-20.

Sannino, A.P., Rack, H.J., Surface topography evolution during sliding wear of 2009 Al-SiC//p./17- 4 PH: Wear v. 181-183 no. 1 Feb 1995. p. 202-211.

Saraf, R.F., Roldan, J.M., Ostrander, S., Derderian, T., Effects of polyimide structure and morphology on adhesion to metals: Annual Technical Conference - ANTEC, Conference Proceedings v. 2 1995.Soc of Plastics Engineers, Brookfield, CT, p. 2639.

Sasano, Tomohiko, Ishiguro, Eiji, Mitani, Shichiro, Tomimori, Hiroshi, Reflectivities of chemical vapor deposition-diamond mirrors in the vacuum ultraviolet region: Review of Scientific Instruments v. 66 no. 2 pt 2 Feb 1995. p. 2211-2213.

Savory, E., Gaudet, L., Toy, N., Laminar and turbulent shear stress measurement using surface hot-wire and film gauges: ICIASF Record, International Congress on Instrumentation in Aerospace Simulation Facilities 1995. IEEE, Piscataway, NJ, 5CH3482-7. p. 5.1-5.6.

Sawada, Kiyoshi, Kawai, Tomohiko, Takeuchi, Yoshimi, Sata, Toshio, Advanced three-dimensional micromachining by means of ultraprecision milling: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 587 July 1995. p. 3129-3135.

Sawada, Kiyoshi, Takeuchi, Yoshimi, Fukushima, Yasuaki, Nishie, akoto, Sata, Toshio, Micro-machining of sculptured surfaces by lathe-type ultra-precision milling machine: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 581 Jan 1995. p. 293-298.

Sayers, Michael W., On the calculation of international roughness index from longitudinal road profile: Transportation Research Record no. 1501 Jul 1995. p. 1-12.

Sayles, R.S., Debris and roughness in machine element contacts, Some current and future engineering implications: Proceedings of the Institution of Mechanical Engineers, Part J,Journal of Engineering Tribology v. 209 no. 3 1995. p. 149-172.

Scherge, M., Sui, X., Ma, X., Bauer, C.L., Jhon, M.S., Kryder, M.H., Tribological properties of barium ferrite films: IEEE Transactions on Magnetics v. 31 no. 6 pt 1 Nov 1995. p. 2928-2930.

Schieber, M., Roth, M., Yao, H., DeVries, M., James, R.B., Goorsky, Bulk and surface stoichiometry of vapor grown mercuric iodide crystals: Journal of Crystal Growth v. 146 no. 1-4 Jan 1 1995. p. 15-22.

Schipper, D.J., de Gee, A.W.J., Lubrication modes and the IRG transition diagram: Lubrication Science v. 8 no. 1 Oct 1995. p. 27-35.

Schmitt, Dirk-Roger, Kratz, Frank, Ringel, Gabriele, Mangelsdorf, uergen, Creuzet, Francois, Garratt, John D., Fabrication and characterization of optical super-smooth surfaces: Proceedings of SPIE - The International Society for Optical Engineering v. 2576 1995. Bellingham, WA, p. 357-363.

Schmittbuhl, Jean, Schmitt, François, and Scholz, Christopher, Scaling invariance of crack surfaces: Journal of Geophysical Research, v. 100, No. B4, p. 5953-5973, (1995).

Schneider, T.W., Martin, S.J., Influence of compressional wave generation on thickness. Shear mode resonator response in a fluid: Analytical Chemistry v. 67 no. 18 Sept 15 1995. p. 3324-3335.

Schoenhoff, M., Chi, L.F., Fuchs, H., Loesche, M., Structural rearrangements upon photoreorientation of amphiphilicazobenzene dyes organized in ultrathin films on solid surfaces: Langmuir v. 11 no. 1 Jan 1995. p. 163-168.

Scholl, D., Everson, M.P., Jaklevic, R.C., Measurement of surface topography and area-specific nanohardness in the scanning force microscope: Journal of Materials Research v. 10 no. 10 Oct 1995. p. 2503-2506.

Schwegmann, S., Tappe, W., Korte, U., Quantitative structure analysis of a disordered system, RHEED study of the CO induced (1 X 2) yields (1 X 1) structure transition of Pt(110): Surface Science v. 334 no. 1-3 Jul 10 1995. p. 55-76.

Seely, J.F., Cruddace, R.G., Kowalski, M.P., Hunter, W.R., Barbee,.W. Jr., Rife, J.C., Eby, R., Stolt, K.G., Polarization and efficiency of a concave multilayer grating in the 135- 250-angstrom region and in normal-incidence and Seya-Namioka mounts: Applied Optics v. 34 no. 31 Nov 1 1995. p. 7347-7354.

Segars, Ronald, Piscitelle, Louis, Adsorption on rough surfaces: Dynamics in Small Confining Systems II, Materials Research Society Symposium Proceedings v. 366 1995. Pittsburgh, PA,. p. 247-252.

Sehmbey, Maninder S., Chow, Louis C., Hahn, Ottfried J., Pais, Martin R., Effect of spray characteristics on spray cooling with liquid nitrogen: Journal of Thermophysics and Heat Transfer v. 9 no. 4 Oct-Dec 1995. p. 757-765.

Seidel, J.P., Haberfield, C.M., Axial capacity of pile sockets in rocks and hard soils: Ground Engineering v. 28 no. 2 Mar 1995. p. 33-38.

Seidel, J.P., Haberfield, C.M., Application of energy principles to the determination of the sliding resistance of rock joints: Rock Mechanics and Rock Engineering v. 28 no. 4 Oct-Dec 1995. p. 211-226.

Shafi, H.S., Antonia, R.A., Anisotropy of the Reynolds stresses in a turbulent boundary layer on a rough wall: Experiments in Fluids v. 18 no. 3 Jan 1995. p. 213-215.

Shang, Jian Ku, Yao, Daping, Effect of interface roughness on fatigue crack growth in Sn-Pb solder joints: American Society of Mechanical Engineers (Paper) 1995. ASME, New York. 6pp 95-WA/EEP-13.

Shcherbinskij, V.G., Influence of stochastic contact layer on certainty of ultrasonic testing: Defektoskopiya no. 6 June 1995. p. 67-74.

Shen, Y.G., O'Connor, D.J., Wandelt, K., MacDonald, R.J., Studies of surface composition and structure of Cu//3Pt(111) by lowenergy alkali ion scattering: Surface Science v. 328 no. 1-2 Apr 20 1995. p. 21-31.

Shen, Yao-chun, Wang, Lin, Lu, Zuhong, Wei, Yu, Zhou, Qingfu, Mao, aifang, Xu, Huijun, Fabrication, characterization and photovoltaic study of a TiO//2 microporous electrode: Thin Solid Films v. 257 no. 1 Feb 15 1995. p. 144-146.

Sherif, H.A., Determination of ball and roller compliances using a vibration measuring technique: Journal of Tribology, Transactions of the ASME v. 117 no. 3 Jul 1995. p. 553-557.

Shi, Jiancheng, Dozier, Jeff, Inferring snow wetness using C-band data from SIR-C's polarimetric synthetic aperture radar: IEEE Transactions on Geoscience and Remote Sensing v. 33 no. 4 Jul 1995.p. 905-914.

Shi, Jiancheng, Wang, James, Hsu, Ann, O'Neill, Peggy, Engman, Edwin T., Estimation of soil moisture and surface roughness parameters using L- band SAR measurements: International Geoscience and Remote Sensing Symposium (IGARSS) v. 1, 1995, p. 507-509.

Shibutani, Y., Kitagawa, H., Multifractals of surface microstructures by wavelet transform: Nippon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan Society of Mechanical Engineers, Part A v. 61 no. 591 Nov 1995. p. 2501-2507.

Shih, C. James, Ezis, Andris, Application of hot-pressed silicon carbide to large high-precision optical structures: Proceedings of SPIE - The International Society for Optical Engineering v. 2543 1995. Bellingham, WA, p. 24-37.

Shimada, Shoichi, Inoue, Ryosuke, Uchikoshi, Junichi, Ikawa, Naoya, Molecular dynamics analysis on microstructure of diamond-turned surfaces: Proceedings of SPIE - The International Society for Optical Engineering v. 2576 1995. Bellingham, WA, p. 396-405.

Shimizu, Naofumi, Furuta, Tomofumi, Waho, Takao, Tomizawa, Masaaki, izutani, Takashi, Photoluminescence study of electron tunneling transfer in coupled- quantum-well structures: Journal of Applied Physics v. 78 no. 5 Sep 1 1995. p. 3221-3229.

Shimomura, Satoshi, Kaneko, Shinjiroh, Motokawa, Takeharu, Shinohara, eisuke, Adachi, Akira, Okamoto, Yasunori, Sano, Naokatsu, Murase, Kazuo, iyamizu, Satoshi, Extremely flat interfaces in GaAs/AlGaAs quantum wells with high Al content (0.7) grown on GaAs (411)A substrates by molecular beam epitaxy: Journal of Crystal Growth v. 150 no. 1-4 pt 1 May 1 1995. p. 409-414.

Shin, Y.C., Oh, S.J., Coker, S.A., Surface roughness measurement by ultrasonic sensing for in-process monitoring: Journal of Engineering for Industry, Transactions of the ASME v. 117 no.3 Aug 1995. p. 439-447.

Shinmura, Takeo, Yamaguchi, Hitomi, Study on a new internal finishing process by the application of magnetic abrasive machining (internal finishing of stainless steel tube and clean gas bomb): JSME International Journal, Series C, Dynamics, Control, Robotics, Design and Manufacturing v. 38 no. 4 Dec 1995. p. 798-804.

Shinohara, Masanori, Yokoyama, Haruki, Inoue, Naohisa, High-performance Al(Ga)As/GaAs resonant tunneling diodes achieved by the control of structural defects at the interface: Materials Science Forum v. 196-201 no. pt 1 1995. p. 555-560.

Shirai, Hajime, Surface morphology and crystallite size during growth of hydrogenated microcrystalline silicon by plasma-enhanced chemical vapor deposition: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 2A Feb 1995. p. 450-458.

Shiraishi, M., Sumiya, H., Surface roughness monitoring and dimensional error control in turning by quasi-sensor fusion: Proceedings of the American Control Conference v. 3 1995., 5CH35736. p. 1727-1731.

Shirazee, Nabeel A., Basak, Amitava, Rare-earth permanent magnet lifting system for heavy loads: IEEE Transactions on Magnetics v. 31 no. 6 pt 2 Nov 1995. p. 3731-3733.

Shulepov, S. Yu., Frens, G., Surface roughness and the particle size effect on the rate of slow perikinetic coagulation: Journal of Colloid and Interface Science v. 170 no. 1 Mar 1 1995. p. 44- 49.

Shur, E.A., Bychkova, N.Ya., Markov, D.P., Wear resistance of rail and wheel steels: Trenie i Iznos v. 16 no. 1 Jan-Feb 1995. p. 80-91.

Silverman, R.L., Roberts, D.E., Troubleshooting the foam/skin insulation extrusion process: Wire Journal International v. 28 no. 10 Oct 1995. p. 66-69.

Skala, S.L., Wu, W., Tucker, J.R., Lyding, J.W., Seabaugh, A., Beam,.A. III, Jovanovic, D., Interface characterization in an InP/InGaAs resonant tunneling diode by scanning tunneling microscopy: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 2 Mar-Apr 1995. p. 660-663.

Skands, Ulrik P.V., Russ, John C., Fractal roughness investigation of isotropically etched surfaces: Journal of Computer-Assisted Microscopy v. 7 no. 2, Jun 1995. p. 101-111.

Sklarek, W., Schwennicke, C., Juergens, D., Pfnuer, H., Structure of dense sulphur layers on Ru(0001) II. The (root 7 X root 7) R19.1 degree structure: Surface Science v. 330 no. 1 Jun 1 1995. p. 11-19.

Smith, A.R., Chao, Kuo-Jen, Shih, C.K., Shih, Y.C., Anselm, K.A., treetman, B.G., Influence of various growth parameters on the interface abruptness of AlAs/GaAs short period superlattices: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 4 Jul-Aug 1995. p. 1824-1829.

Smith, R.A., Non-destructive evaluation for corrosion in ageing aircraft - Part 2. Radiography, mechanical impedance and alternative methods, comparison of techniques: Insight - Non-Destructive Testing and Condition Monitoring v. 37 no.11 Nov 1995. p. 884-891.

Smith, R.A., Non-destructive evaluation for corrosion in ageing aircraft - Part 1. Introduction, ultrasonic and. eddy current methods: Insight - Non-Destructive Testing and Condition Monitoring v. 37 no.10 Oct 1995. p. 798-807.

Sober, Douglas J., Selecting laminates using 'fitness for use' criteria: Surface Mount Technology Magazine v. 9 no. 4 Apr 1995. 3p.

Soga, Tetsuo, Jimbo, Takashi, Umeno, Masayoshi, Growth and characterization of two-dimensional GaP on Si by metalorganic chemical vapor deposition: Journal of Crystal Growth v. 146 no. 1-4 Jan 1 1995. p. 554-557.

Sollboehmer, O., May, K.-P., Anders, M., Force microscopical investigation of human teeth in liquids: Thin Solid Films v. 264 no. 2 Aug 15 1995. p. 176-183.

Soltani, Mehdi, Ahmadi, Goodarz, Bayer, Raymond G., Gaynes, Michael A., Particle detachment mechanisms from rough surfaces under substrate acceleration: Journal of Adhesion Science and Technology v. 9 no. 4 1995. p. 453-473.

Sommer, F., Minh Duc, T., Pirri, R., Meunier, G., Quet, C., Surface Morphology of poly(butyl acrylate)/poly(methyl methacrylate) core shell latex by atomic force microscopy: Langmuir v. 11 no. 2 Febr 1995. p. 440-448.

Sontowski, Peter, How to extend the life of asphalt pavement: Better Roads v. 65 no. 4 Apr 1995. p. 22-24.

Soong, Ta Wei, DePue, Michael, Anderson, Douglas, Xia, Renjie, Changes of Manning's roughness coefficient with river stages: International Water Resources Engineering Conference - Proceedings v.2 1995. ASCE, New York. p. 1759-1763.

Sotnikov, V.M., The computer simulation of target substance redeposition to the vertical edge of a microroughness as a result of the relief surface sputtering under ion bombardment: Poverkhnost Fizika Khimiya Mekhanika no. 3 Mar 1995. p. 66-74.

Sprang, N., Theirich, D., Engemann, J., Plasma and ion beam surface treatment of polyethylene: Surface & Coatings Technology v. 75 no. 1-3 pt 2 Oct 1995. p. 689-695.

Springholz, G., Frank, N., Bauer, G., Origin of surface roughening in lattice-mismatched Frank van der Merwetype heteroepitaxy: Thin Solid Films v. 267 no. 1-2 Oct 15 1995. p. 15-23.

Steinsland, Elin, Nese, Martin, Hanneborg, Anders, Bernstein, RalphW., Sandmo, Halle, Kittilsland, Gjermund, Boron etch-stop in TMAH solutions: International Conference on Solid-State Sensors and Actuators, and Eurosensors IX, Proceedings v. 1 1995. IEEE, Piscataway, NJ. p. 190-193.

Stepien, Z.M., Surface self diffusion of molybdenum: Vacuum v. 46 no. 5-6 May-Jun 1995. p. 575-577.

Stigenberg, Anna Hultin, Haraldsson, Jan, Comparison between AISI 52L100 and the precision wire steel Sandvik20AP regarding machinability: Proceedings of the Annual Convention of the Wire Association International 1995. Wire Assoc Int Inc, Guilford, CT, p. 9-17.

Stojadinovic, N., Pejovic, M., Golubovic, S., Ristic, G., Davidovic., Dimitrijev, S., Effect of radiation-induced oxide-trapped charge on mobility in p. - channel MOSFETs: Electronics Letters v. 31 no. 6 Mar 16 1995. p. 497-498.

Storm, A.B., Lukey, P.W., Werner, K., Caro, J., Radelaar, S., Roughening of SiGe layers grown with gas-source MBE, Dependence on Ge concentration and growth temperature: Journal of Crystal Growth v. 157 no. 1-4 Dec 2 1995. p. 312-316.

Stor-Pellinen, Jyrki, Luukkala, Mauri, Paper roughness measurement using airborne ultrasound: Sensors and Actuators, A, Physical v. 49 no. 1-2 Jun 1995. p. 37-40.

Stout, K.J., Blunt, L., Nanometres to micrometres, Three-dimensional surface measurement in bio-engineering: Surface & Coatings Technology v. 71 no. 2 Mar 1995. p. 69-81.

Strandman, Carola, Rosengren, Lars, Backlund, Ylva, Fabrication of 45 degree optical mirrors on (100)Si using wet anisotropic etching: Proceedings of the IEEE Micro Electro Mechanical Systems 1995. IEEE, Piscataway, NJ, p. 244-249.

Strelkoff, T.S., Deltour, J.L., Baume, J.P., Propagation of upstream control measures along a canal pool: International Water Resources Engineering Conference - Proceedings v.1 1995. ASCE, New York. p. 174-178.

Stroucken, T., Knorr, A., Anthony, C., Schulze, A., Thomas, P., Koch,.W., Koch, M., Cundiff, S.T., Feldmann, J., Gobel, E.O., Light propagation and disorder effects in semiconductor multiple quantum wells: Physical Review Letters v. 74 no. 12 Mar 20 1995. p. 2391-2394.

Stutsman, Richard D., Rothfuss, Blake D., TBM tunnel friction values for the Grizzly Powerhouse Project: Waterpower - Proceedings of the International Conference on Hydropower v. 3 1995. ASCE, New York. p. 2344-2351.

Su, H.P., Liu, H.W., Wang, P.W., Cheng, K.L., Jen, I.M., Hong, G., heng, H.C., Novel tunneling dielectric prepared by oxidation of ultrathin rugged polysilicon for 5-V-only nonvolatile memories: IEEE Electron Device Letters v. 16 no. 6 Jun 1995. p. 250-252.

Su, Hui, Yan, Zhenqi, Stanley, J.T. II, Fractal analyses of microstructure and properties of HSLA steels: Journal of Materials Science Letters v. 14 no. 20 Oct 15 1995. p. 1436-1439.

Sugai, Kazumi, Okabayashi, Hidekazu, Kobayashi, Akiko, Yako, Tadaaki, Ishida, Shunji, In situ monitoring of Al growth in chemical vapor deposition by detecting reflected laser light intensity: Japanese Journal of Applied Physics, Part 2, Letters v. 34 no. 4A Apr 1, 1995. p. L429-L432.

Sugimura, Joichi, Yamamoto, Yuji, Hydrodynamic lubrication of self-affine fractal surfaces: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 592 Dec 1995. p. 4751-4756.

Sui, Ping C., Prediction of film thickness and friction at a rotary pump blade and liner interface: Tribology Symposium 1995 American Society of Mechanical Engineers, Petroleum Division, PD v. 72 1995. ASME, New York. p. 115- 122.

Sukhobrus, A.A., Mel'nik, V.A., Influence of strength of the carbide and nitride ceramics on power consumption of their grinding and roughness of machined surface: Sverkhtverdye Materialy no. 1 Jan-Feb 1995. p. 42-47.

Suliman, S.M.A., Spark irradiance against vibration as a measure of grinding performance: Journal of the Institution of Engineers (India), Mechanical Engineering Division v. 76 May 1995. p. 44-46.

Summerfelt, Scott R., Kotecki, Dave, Kingon, Angus, Al-Shareef, H.N., Pt hillock formation and decay: Ferroelectric Thin Films IV, Materials Research Society Symposium Proceedings v. 361 1995. Pittsburgh, PA, p. 257- 262.

Sun, S.C., Wang, L.S., Yeh, F.L., Rapid thermal chemical vapor deposition of nitrogen-doped polysilicon for high-performance and high-reliability CMOS technology: Rapid Thermal and Integrated Processing IV, Materials Research Society Symposium Proceedings v. 387 1995. Pittsburgh, PA,. p. 329-334.

Sundaram, P.A., Deformation-induced surface roughening studies in an AISI 1090 spheroidized steel: Scripta Metallurgica et Materialia v. 33 no. 7 Oct 1 1995. p. 1093-1099.

Sunden, Bengt, Faghri, Mohammad, Kenyon, Elizabeth J., Overview of fabrication methods and fluid flow and heat transfer characteristics of micro channels: Advances in Engineering Heat Transfer, 1995. Computational Mechanics Publ. p. 3-23.

Sung, G.Y., Suh, J.D., Jung, S.-D., Observation of the early stages of b-axis oriented PrBa//2Cu//3O////7// minus //x thin film growth by AFM: Film Synthesis and Growth Using Energetic Beams, Materials Research Society Symposium Proceedings v. 388 1995. Pittsburgh, PA, p. 433-438.

Susic, E., Grabec, I., Application of a neural network to the estimation of surface roughness from AE signals generated by friction process: International Journal of Machine Tools & Manufacture v. 35 no. 8 Aug1995. p. 1077-1086.

Suzuki, Hiroaki, Hirata, Atsushi, Tokura, Hitoshi, Yoshikawa, asanori, Processing of CVD diamond by ArF excimer laser irradiation: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 3 Mar 1995. p. 406-410.

Suzuki, Hiroshi, Hirano, Minoru, Abe, Moritoshi, Niino, Yasuo, Namba, oshiharu, Ductile grinding of chemical vapor deposited silicon carbide for x-raymirrors: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 4 Apr 1995. p. 571-579.

Suzuki, Masaru, Inasaki, Ichiro, Surface topography measurement of super abrasive wheels: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 585 May 1995. p. 2003-2009.

Suzuki, Shoji, Nishihira, Henry, Study of slider dynamics over very smooth magnetic disks: American Society of Mechanical Engineers (Paper) 1995. ASME, New York. 6pp 95-TRIB-38.

Swartzentruber, B.S., Schacht, M., Kinetics of atomic-scale fluctuations of steps on Si(001) measured with variable-temperature STM: Surface Science v. 322 no. 1-3 Jan 1 1995. p. 83-89.

Szabo, Andras, Engel, Thomas, Structural studies of TiO//2(110) using scanning tunneling microscopy: Surface Science v. 329 no. 3 May 20 1995. p. 241-254.

Szymczak, H., Rewienski, M., Zuberek, R., Effect of roughness on the surface anisotropy and magnetostriction of magnetic multilayers: Journal of Magnetism and Magnetic Materials v. 139 no. 1-2 Jan 1 1995. p. 151-156.

Tabata, Osamu, pH-controlled TMAH etchants for silicon micromachining: International Conference on Solid-State Sensors and Actuators, and Eurosensors IX, Proceedings v. 1 1995. IEEE, Piscataway, NJ. p. 83-86.

Tabucanon, Jaime T., Airey, David W., Poulos, Harry G., Pile skin friction in sands from constant normal stiffness tests: Geotechnical Testing Journal v. 18 no. 3 Sep 1995. p. 350-364.

Tajima, H., Haraguchi, M., Fukui, M., Surface plasmon polariton radiation from silver films on fluoride films and surface roughness parameters of those silver films: Surface Science v. 323 no. 3 Jan 20 1995. p. 282-287.

Takabatake, Masaru, Wakui, Youkou, Konishi, Nobutake, Indium tin oxide dry etching using HBr gas for thin-film transistor liquid crystal displays: Journal of the Electrochemical Society v. 142 no. 7 Jul 1995. p. 2470- 2473.

Takahashi, Toshio, Nakatani, Shinichiro, Dynamical theory of x-ray diffraction for the study of crystal surfaces: Surface Science v. 326 no. 3 Mar 20 1995. p. 347-360.

Takahashi, Masamitu, Nakatani, Shinichiro, Takahashi, Toshio, Zhang, iaowei, Ando, Masami, Fukatsu, Susumu, Shiraki, Yasuhiro, Si/1ML-Ge/Si(001) interface structure characterized by surface X-ray diffraction and X-ray standing-wave method: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 5A May 1995. p. 2278-2283.

Takakura, Norio, Yamaguchi, Katsuhiko, Kitagawa, Masahiko, Suppression of free surface roughening of metal with plastic deformation: JSME International Journal, Series C, Dynamics, Control, Robotics, esign and Manufacturing v. 38 no. 4 Dec 1995. p. 824-830.

Takaya, Yasuhiro, Miyoshi, Takashi, Arai, Masatoshi, Hayashi, Kazushi, etaka, Masafumi, Development of random micro-roughness measuring apparatus based on Fraunhofer diffraction - subnanometer measurements by the new error calibration method: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 3 Mar 1995. p. 377-381.

Takeda, M., Endoh, Y., Kamijo, A., Mizuki, J., Interfacial roughness and the giant magnetoresistance effect of Fe/Crmultilayers: Physica B, Condensed Matter v. 213-214 Aug 1 1995. p. 248-250.

Takeuchi, Yoshimi, Nagasaka, Manabu, Morishige, Koichi, 5-axis control machining with top and side cutting edges of ball endmill: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 4 Apr 1995. p. 561-565.

Takeuchi, Yoshimi, Sawada, Kiyoshi, Sata, Toshio, Computer aided ultra-precision micro-machining of metallic materials: Proceedings - IEEE International Conference on Robotics and Automation v. 1 1995. IEEE, Piscataway, NJ, 5CB3461-1. p. 67-72.

Tanaka, Takeshi, Isono, Yoshitada, Ueda, Satoru, Influences of surface roughness and phase transformations induced by grinding on the strength of ZrO//2-Y//2O//3: Precision Engineering v. 17 no. 2 Apr 1995. p. 117-123.

Tassin, A.L., Li, C.-Y., Ceccio, S.L., Bernal, L.P., Velocity field measurements of cavitating flows: Experiments in Fluids v. 20 no. 2 Dec 1995. p. 125-130.

Taylor, Thomas A., Surface roughening of metallic substrates by high pressure pure waterjet: Surface & Coatings Technology v. 76-77 no. 1-3 pt 1 Nov 1995. p. 95-100.

Tejchman, Jacek, Wu, Wei, Experimental and numerical study of sand-steel interfaces: International Journal for Numerical and Analytical Methods in Geomechanics v. 19 no. 8 Aug 1995. p. 513-536.

Temst, K., Van Bael, M.J., Wuyts, B., Van Haesendonck, C., ruynseraede, Y., de Groot, D.G., Koeman, N., Griessen, R., Roughness in Nb/Cu multilayers determined by x-ray diffraction and atomic force microscopy:

Applied Physics Letters v. 67 no. 23 Dec 4 1995. p. 3429-3431.

Teokharov, Alexander N., Strong rough surface wave reflection: Proceedings of SPIE - The International Society for Optical Engineering v. 2469 1995. Bellingham, WA, p. 371-381.

Terheci, M., Manory, R.R., Hensler, J.H., Friction and wear of automotive grey cast iron under dry sliding conditions. Part 1 - relationships between wear loss and testing parameters: Wear v. 180 no. 1-2 Jan 1995. p. 73-78.

Tillack, M.S., Abelson, R.D., Interface conductance between roughened Be and steel under thermal deformation: Fusion Engineering and Design v. 27 no. pt A Mar 1 1995. p. 232-239.

Toenshoff, H.K., Wobker, H.-G., Brandt, D., Tribological aspects of hard turning with ceramic tools (**C**): Lubrication Engineering v. 51 no. 2 Feb 1995. p. 163-168.

Tokumoto, Hiroshi, Morita, Yukinori, Scanning tunneling microscopy of hydrogen-terminated Si(111) surface: Optoelectronics - Devices and Technologies v. 10 no. 2 Jun 1995. p. 167- 182.

Tomita, Yoji, Eda, Hiroshi, Nakamura, Masaru, Study for ultra precision processing of silicon wafer by lapping stone- by new lapping stone instead of free abrasive lapping process: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 10 Oct 1995. p. 1428-1432.

Tong, Gang, Pan, Yong, Afeworki, Mobae, Poliks, Mark D., Schaefer, acob, Rotational-echo double-resonance NMR to observe the interfaces of heterogeneous polymer blends: Macromolecules v. 28 no. 5 Feb 27 1995. p. 1719-1720.

Tong, Q.-Y., Gosele, U., Yuan, C., Steckl, A.J., Reiche, M., Silicon carbide wafer bonding: Journal of the Electrochemical Society v. 142 no. 1 Jan 1995. p. 232-236.

Toprac, Anthony J., Wang, Shi-Qing, Musher, Joshua, Gordon, Roy G., Step coverage and material properties of CVD titanium nitride films from TDMAT and TDEAT organic precursors: Evaluation of Thin Film and Surface Structure and Morphology, Materials Research Society Symposium Proceedings v. 355 1995. Pittsburgh, PA, p. 323-328.

Torii, Kahoru, Nishino, Koichi, Thermal contact resistance of wavy surfaces: Revista Brasileira de Ciencias Mecanicas/Journal of the Brazilian Society of Mechanical Sciences v. 17 no. 1 1995. p. 56-76.

Torii, Tashiyuki, Onoe, Toshitsugu, Honda, Kazuo, Stress intensity factors evaluated from discontinuous displacements along a slant crack with a center-hole notch: Nippon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan Society of Mechanical Engineers, Part A v. 61 no. 586 Jun 1995. p. 1225-1231.

Torrance, A.A., Using profilometry for the quantitative assessment of tribological function - PC-based software for friction and wear prediction: Wear v. 181-183 no. 1 Feb 1995. p. 397-404.

Touge, Mutsumi, Ohbuchi, Yoshifumi, Matsuo, Tetsuo, Ueda, Noboru, aeda, Naruo, Lapping of Mn-Zn ferrite (1st report, effect of fixed and loose abrasive grains on removal rate and surface roughness): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 587 July 1995. p. 3116-3122.

Toyooka, Satoru, Gong, Xinglong, Digital speckle pattern interferometry for observing the entire process of plastic deformation of a solid object: Japanese Journal of Applied Physics, Part 2, Letters v. 34 no. 12B Dec15 1995. p. L1666-L1668.

Trail, S.J., Bowen, P., Effects of stress concentrations on the fatigue life of a gamma-based titanium aluminide: Materials Science & Engineering A, Structural Materials, Properties, Microstructure and Processing v. A192-19 no. pt 1 Feb 15 1995. p. 427-434.

Tran, P., Brahimi, M.T., Paraschivoiu, I., Pueyo, A., Tezok, F., Ice accretion on aircraft wings with thermodynamic effects: Journal of Aircraft v. 32 no. 2 Mar-Apr 1995. p. 444-446.

Trollsas, Per-Olov, Water uptake in newsprint during offset printing: TAPPI Journal v. 78 no. 1 Jan 1995. p. 155-160.

Tsaih, W.-Ch., Huang, Ch.-K., Tseng, Ts.-Y., Growth of CeO//2 films on sapphire and MgO by rf magnetron sputtering: Journal of the American Ceramic Society v. 78 no. 7 Jul 1995. p. 1969- 1973.

Tsionsky, V., Daikhin, L., Urbakh, M., Gileadi, E., Behavior of quartz crystal microbalance in nonadsorbed gases at high pressures: Langmuir v. 11 no. 2 Febr 1995. p. 674-678.

Tso, Pei-Lum, Study on the grinding of Inconel 718: Journal of Materials Processing Technology v. 55 no. 3-4 Dec 1995. p. 421-426.

Tsuchiya, Kazuyoshi, Shima, Toshio, Horisawa, Hideyuki, Yasunaga, obuo, Improvement of surface roughness by oxygen ion beam machining: Nanotechnology v. 6 no. 4 Oct 1995. p. 158-161.

Tsukruk, Vladimir V., Reneker, Darrell H., Surface morphology of syndiotactic polypropylene single crystals observed by atomic force microscopy: Macromolecules v. 28 no. 5 Feb 27 1995. p. 1370-1376.

Tuck, E.O., Kouzoubov, A., Laminar roughness boundary condition: Journal of Fluid Mechanics v. 300 Oct 10 1995. p. 59-70.

Tzeng, Y.C., Chen, K.S., Huang, H., Moment method simulation of rough surface scattering based on wavelet representation: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, p. 1448-1450.

# 1995 U-Z

Uematsu, Yasushi, Yamada, Motohiko, Effects of aspect ratio and surface roughness on the time-averaged aerodynamic forces on cantilevered circular cylinders at high Reynolds numbers: Journal of Wind Engineering and Industrial Aerodynamics v. 54-55 Feb1995. p. 301-312.

Uenishi, Yuji, Low-damage and smooth etching of GaAs by using a neon ion beam: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 4A Apr 1995. p. 2037-2042.

Umehara, N., Kobayashi, T., Kato, K., Internal polishing of tube with magnetic fluid grinding part 1, fundamental polishing properties with taper-type tools: Journal of Magnetism and Magnetic Materials v. 149 no. 1-2 1995. p. 185- 187.

Uno, Katsuhiro, Uozumi, Jun, Asakura, Toshimitsu, Speckle clustering in diffraction patterns of random objects underring-slit illumination: Optics Communications v. 114 no. 3-4 Feb 1 1995. p. 203-210.

Ushenko, Alexander G., Polarization structure of laser scattering field: Optical Engineering v. 34 no. 4 4 1995. p. 1088-1093.

Ustinov, M.V., Secondary instability mode generation in the Tollmien-Schlichting wave interaction with uneven wall: Izvestiya Akademii Nauk. Mekhanika Zhidkosti I Gaza no. 3 May-June1995. p. 28-38.

Uwaha, Makio, Saito, Yukio, Sato, Masahide, Fluctuations and instabilities of steps in the growth and sublimation of crystals: Journal of Crystal Growth v. 146 no. 1-4 Jan 1 1995. p. 164-170.

Vachon, Paris W., Johannessen, Johnny A., Browne, Dylan P., ERS-1 SAR images of atmospheric gravity waves: IEEE Transactions on Geoscience and Remote Sensing v. 33 no. 4 Jul 1995.p. 1014-1025.

Vailionis, A., Brazdeikis, A., Flodstrom, A.S., Superconducting multilayers, microstructural properties studied by x- ray diffraction: Structure and Properties of Multilayered Thin Films, Materials Research Society Symposium Proceedings v. 382 1995. Pittsburgh, PA, p. 217-222.

Vallejo, Luis E., Zhou, Yun, Fractal dimension of granular materials and their engineering properties: Proceedings of Engineering Mechanics v. 1 1995. ASCE, New York,. p. 469-472.

Van Bavel, P.G.M., Ruijl, T.A.M., Van Leeuwen, H.J., Muijderman, E.A., Upstream pumping of radial lip seals by tangentially deforming, rough seal surfaces: American Society of Mechanical Engineers (Paper) 1995. ASME, New York. 10pp 95-TRIB-13.

van Hasselt, C.W., Devillers, M.A.C., Rasing, Th., Aktsipetrov, O.A., Second-harmonic generation from thick thermal oxides on Si(111), the influence of multiple reflections: Journal of the Optical Society of America B, Optical Physics v. 12 no. 1Jan 1995. p. 33-36.

Van Nostrand, Joseph E., Chey, S. Jay, Cahill, David G., Surface roughness and pattern formation during homoepitaxial growth of Ge(001) at low temperatures: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 4 Jul-Aug 1995. p. 1816-1819.

Vance, Roderick W.C., Love, John D., Back-reflexion from fused biconic couplers: Journal of Lightwave Technology v. 13 no. 11 Nov 1995. p. 2282-2289.

Vandervorst, W., Bender, H., Storm, W., Heyns, M., Polleunis, C., ertrand, P., Advanced characterisation, an indispensable tool for understanding ultra clean processing: Microelectronic Engineering v. 28 no. 1-4 Jun 1995. p. 27-34.

Varadi, K., Kozma, M., Poller, R., Effect of surface roughness on contact and stress states of spur gears: Tribotest v. 2 no. 1 Sep 1995. p. 25-35.

Vasileska, Dragica, Bordone, Paolo, Eldridge, Terry, Ferry, David K., Calculation of the average interface field in inversion layers using zero-temperature Green's function formalism: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 4 Jul-Aug 1995. p. 1841-1847.

Vasil'ev, A.G., Murav'ev, V.V., Smirnov, A.N., Ultrasonic method of testing surface roughness: Russian Ultrasonics v. 25 no. 1 1995. p. 10-13.

Venner, C.H., Lubrecht, A.A., Numerical analysis of the influence of waviness on the film thickness of a circular EHL contact: American Society of Mechanical Engineers (Paper) 1995. ASME, New York. 9pp 95-TRIB-8.

Vetchinkin, A.S., Rough insulator surface, the possibility of the surface enhancement of electromagnetic field: Physics, Chemistry, and Mechanics of Surfaces v. 10 no. 12 1995. p. 1374- 1376.

Vieweg, S., Unger, R., Schroeter, K., Donth, E., Heinrich, G., Frequency and temperature dependence of the small-strain behavior of carbon-black filled vulcanizates: Polymer Networks & Blends v. 5 no. 4 1995. p. 199-204.

Vinogradov, V.S., Korshunov, Yu. S., Sidulova, E. Yu., Numerical simulation for the integral yield of electrons scattered from a rough surface: Physics, Chemistry, and Mechanics of Surfaces v. 11 no. 11 1995. p. 1137- 1143.

Visuri, Steven R., Gilbert, Jeremy L., Walsh, Joseph T. Jr., Wigdor, arvey A. D.D.S., Shear test of composite bonded to dentin, Er,YAG laser versus dental handpiece preparations: Proceedings of SPIE - The International Society for Optical Engineering v. 2394 1995. Bellingham, WA, p. 223-228.

Viswanath, N., Bellow, D.G., Development of an equation for the wear of polymers: Wear v. 181-183 no. 1 Feb 1995. p. 42-49.

Voorma, H.-J., Louis, E., Koster, N.B., Bijkerk, F., van der Wiel, J., Production of Mo/Si multilayers at increased substrate temperatures, the effect on D-spacing, interface roughness and density: Structure and Properties of Multilayered Thin Films, Materials Research Society Symposium Proceedings v. 382 1995, p. 375-380.

Voort, J. Vande, Bahadur, S., Growth and bonding of transfer film and the role of CuS and PTFE in the tribological behavior of PEEK: Wear v. 181-183 no. 1 Feb 1995. p. 212-221.

Vurgaftman, Igor, Singh, Jasprit, Carrier dynamics and high speed issues in devices based on low dimensional structures: Proceedings of the IEEE Cornell Conference on Advanced Concepts in High Speed Semiconductor Devices and Circuits 1995. IEEE, Piscataway, NJ, p. 398-407.

Vydra, Jan, Beisinghoff, Hanno, Feix, Hubertus, Eckl, M., Strohriegl, eter, Goertz, W., Eich, Manfred, Photobleaching in side chain NLO-polymers: Proceedings of SPIE - The International Society for Optical Engineering v. 2527 1995. Bellingham, WA, p. 171-179.

Vysotskij, V.I., Kuz'min, R.N., Maksyuta, N.V., Above-surface channelling and coherent characteristic radiation of protons and positrons near conducting or magnetic crystals: Poverkhnost Fizika Khimiya Mekhanika no. 4 Apr 1995. p. 111-113.

Wakuri, Yutaro, Hamatake, Toshiro, Soejima, Mitsuhiro, Kitahara, atsumi, Study on the mixed lubrication of piston rings in internal combustion engine: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 583 Mar 1995. p. 1123-1128.

Walton, C.C., Kortright, J.B., Role of crystallinity in roughness of Ru/C multilayers-an amorphization study: Structure and Properties of Multilayered Thin Films, Materials Research Society Symposium Proceedings v. 382 1995, p. 369-374.

Wang, C.H., Shih, W.C., Somekh, R.E., Evetts, J.E., Jackson, D., Correlation of roughness, impurity, infra-red emissivity and sputter conditions for aluminium films: Beam-Solid Interactions for Materials Synthesis and Characterization, Materials Research Society Symposium Proceedings v. 354 1995., Pittsburgh, PA, p. 523-528.

Wang, Haiming, Assessment of optical constants of multilayer thin films with columnar- structure-induced anisotropy: Journal of Physics D, Applied Physics v. 28 no. 3 Mar 14 1995. p. 571-575.

Wang, Hsin-Fu, Evaluation of surface properties of ceramic fibers on a micro-scale: Ceramic Engineering and Science Proceedings v. 16 no. 5 Sep-Oct 1995. p. 997-1004.

Wang, N., Fung, K.K., Xiao, R.F., High resolution electron microscopy study of as-grown, crushed and cleaved C**6**0 crystals: Surface Science v. 328 no. 1-2 Apr 20 1995. p. L539-L545.

Wang, N.-Y., Vesecky, J.F., Fischer, K., Onstott, R.G., Shuchman,.A., Sea surface temperature estimate using active/passive microwave remote sensing, outdoor experiment and model comparison: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, p. 1381-1383.

Wang, S., Komvopoulos, K., Fractal theory of the temperature distribution at elastic contacts of fast sliding surfaces: Journal of Tribology, Transactions of the ASME v. 117 no. 2 Apr 1995. p. 203-215.

Wang, S., Siqueiros, J., Machorro, R., Nonlocal effects on the optical response of a rough surface: Optics Communications v. 122 no. 1-3 Dec 15 1995. p. 9-15.

Wang, Sam S.Y., 3D free surface flow model verifications a proposed procedure: International Water Resources Engineering Conference - Proceedings v.2 1995. ASCE, New York. p. 1541-1545.

Wang, X.-S., Pechman, R.J., Weaver, J.H., Ion sputtering of GaAs(110), from individual bombardment events to multilayer removal: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 5 Sep-Oct 1995. p. 2031-2040.

Wang, Z., Kondo, K., Mori, T., Surface smoothing mechanism by replication in ironing process: Journal of Engineering for Industry, Transactions of the ASME v. 117 no.2 May 1995. p. 259-265.

Wang, Z.L., Shapiro, A.J., Studies of LaAlO//3 left brace 100 right brace surfaces using RHEED and REM II, 5 X 5 surface reconstruction: Surface Science v. 328 no. 1-2 Apr 20 1995. p. 159-169.

Warren, Thomas L., Krajcinovic, Dusan, Fractal models of elastic-perfectly plastic contact of rough surfaces based on the cantor set: International Journal of Solids and Structures v. 32 no. 19 1995. p. 2907-2922.

Wasa, Kiyotaka, Satoh, T., Tabata, K., Adachi, H., Ichikawa, Y., etsune, K., Microstructures of ultrathin films of sputtered PbTiO//3: Ferroelectric Thin Films IV, Materials Research Society Symposium Proceedings v. 361 1995. Pittsburgh, PA, p. 105- 110.

Wasserfall, J., Ranke, W., Step topography of Si(001) vicinals, clean and after deposition of As, b and Bi: Surface Science v. 331-333 no. pt B Jul 1 1995. p. 1099-1104.

Watanabe, Toshio, Fukui, Shigehisa, Method for controlling tactile sensation of surface roughness using ultrasonic vibration: Proceedings - IEEE International Conference on Robotics and Automation v. 1 1995. IEEE, Piscataway, NJ, p. 1134-1139.

Watanabe, Yo., Nakamura, Yo., Hirayama, Sh., Naota, Yu., AFM study of surface morphology of aluminum nitride thin films: Film Synthesis and Growth Using Energetic Beams, Materials Research Society Symposium Proceedings v. 388 1995. Pittsburgh, PA, p. 399-404.

Watanabe, Yoshihisa, Nakamura, Yoshikazu, Hirayama, Shigekazu, aniguchi, Nobuki, Nanometer-scale observations of the corroded surfaces of metallic glass Fe//4//0Ni//3//8Mo//4B//1//8: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 3 May-Jun 1995. p. 1207-1211.

Watt, V.H.C., Moinpour, M., Bower, R., Sundararaman, R., Atomic force microscopy, a key to direct wafer bonding technology: Journal of Materials Science Letters v. 14 no. 2 Jan 15 1995. p. 96-98.

Watt, V.H.C., Moinpour, M., Sadjadi, R., Lu, W., Neubauer, G., Bower, Surface roughness investigation of thin SiO//2 films deposited from N//2O and SiH//4: Evoluation of Thin Film and Surface Structure and Morphology, Materials Research Society Symposium Proceedings v. 355 1995. Pittsburgh, PA, p. 377-382.

Weber, K.J., Blakers, A.W., Liquid phase epitaxy of silicon on multicrystalline silicon substrates: Journal of Crystal Growth v. 154 no. 1-2 Sept 1 1995. p. 54-59.

Weick, Brian L., Bhushan, Bharat, Tribological and dynamic behavior of alternative magnetic tape substrates: Wear v. 190 no. 1 Nov 1995. p. 28-43.

Weise, Thomas, Matzler, Christian, Radiometric and structural measurements of snow samples: International Geoscience and Remote Sensing Symposium (IGARSS) v. 3, 1995. IEEE, Piscataway, NJ, p. 1762-1764.

Weisz, S.Z., Avalos, J., Gomez, M., Many, A., Goldstein, Y., Savir, Space charge layers at the porous silicon surface: Defect and Impurity Engineered Semiconductors and Devices, Materials Research Society Symposium Proceedings v. 378 1995, p. 899-904.

Wennerberg, A., Albrektsson, T., Andersson, B., Animal study of c.p. titanium screws with different surface topographies: Journal of Materials Science, Materials in Medicine v. 6 no. 5 May 1995.p. 302-309.

Werner, Christian, Streicher, Juergen, Banakh, Victor, Smalikho, Igor, aul, Bruno, Combination of laser cloud ceilometer, sonic anemometer, and cw- Doppler lidar for boundary layer measurements: Combined Optical-Microwave Earth and Atmosphere Sensing - Conference Proceedings 1995. IEEE, Piscataway, NJ, p. 145-147.

Werner, Wolfgang S.M., Magic angle for surface roughness for intensity ratios in AES/XPS: Surface and Interface Analysis v. 23 no. 10 Sept 1995. p. 696-704.

Werner, Wolfgang S.M., Partial intensity analysis (PIA) for quantitative electron spectroscopy: Surface and Interface Analysis v. 23 no. 11 Oct 1995. p. 737-752.

West, C.S., O'Donnell, K.A., Observations of backscattering enhancement from polaritons on a rough metal surface: Journal of the Optical Society of America A, Optics and ImageScience, and Vision v. 12 no. 2 Feb 1995. p. 390-397.

Westra, K.L., Thomson, D.J., Effect of tip shape on surface roughness measurements from atomic force microscopy images of thin films: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 2 Mar-Apr 1995. p. 344-349.

Westra, Sicco W.T., Cutting out reflections: Glass v. 72 no. 2 Feb 1995. p. 47.

Wetzel, Kyle K., Farokhi, Saeed, Influence of vortex generators on NREL S807 airfoil aerodynamic characteristics and wind turbine performance: Wind Engineering v. 19 no. 3 1995. p. 157-165.

Williams, Roger T., Evatt, Steven R., Legg, James D., Weichold, Mark H., Blue light emission observed in a monolithic thin film edge emission vacuum microelectronic device: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 2 Mar-Apr 1995. p. 500-504.

Windt, David L., Brown, W.L., Volkert, C.A., Waskiewicz, W.K., Dependence of stress on background pressure in sputtered Mo/Simultilayer films: Thin Films, Stresses and Mechanical Properties V, Materials Research Society Symposium Proceedings v. 356 1995. Pittsburgh, PA, p. 137-142.

Wirth, M.J., Piasecki-Coleman, D.A., Montgomery, M.E., Spectroscopic investigation of sodium dodecyl sulfate adsorbed to atrimethylsiloxane monolayer on silica: Langmuir v. 11 no. 3 Mar 1995. p. 990-995.

Wong, M., Eulenberger, J., Schenk, R., Hunziker, E., Effect of surface topology on the osseointegration of implant materials in trabecular bone: Journal of Biomedical Materials Research v. 29 no. 12 Dec 1995. p. 1567- 1575.

Worrall, G.M., Chapman, R.K., Seed, H., Study of the sources of sizing error incurred in manual ultrasonic NDT: Insight - Non - Destructive Testing and Condition Monitoring v. 37 no.10 Oct 1995. p. 780-787.

Wu, Shuoxian, Kittinger, E., On the relevance of sound scattering to the prediction of traffic noise in urban streets: Acustica v. 81 no. 1 Jan-Feb 1995. p. 36-42.

Wu, Y., Talke, F.E., Effect of surface roughness on the head-tape interface: American Society of Mechanical Engineers (Paper) 1995. ASME, New York. 6pp 95-TRIB-30.

Xie, H., Effects of fractal crack: Theoretical and Applied Fracture Mechanics v. 23 no. 3 Sept-Oct 1995. p. 235-244.

Xie, Heping, Sanderson, David J., Fractal kinematics of crack propagation in geomaterials: Engineering Fracture Mechanics v. 50 no. 4 Mar 1995. p. 529-536.

Xie, Y.H., Fitzgerald, E.A., Silverman, P.J., Fabrication and application of relaxed buffer layers: Materials Science & Engineering B, Solid-State Materials for Advanced Technology v. B30 no. 2-3 Mar 1995. p. 201-203.

Xin, Yun-Biao, Hsia, K. Jimmy, Lange, David A., Quantitative characterization of the fracture surface of Si single crystals by confocal microscopy: Journal of the American Ceramic Society v. 78 no. 12 Dec 1995. p. 3201- 3208.

Xing, Ai, Jianhua, Zhang, Study on the grinding of polycrystalline diamond with slotted diamond wheels: Technical Paper - Society of Manufacturing Engineers. MR 1995. 5p.

Xu, Gang, Sadeghi, Farshid, Thermal EHL analysis of circular contacts with measured surface roughness: American Society of Mechanical Engineers (Paper) 1995. ASME, New York. 10pp 95-TRIB-29.

Xu, H., Permana, H., Lu, Y., Ng, K.Y.S., STM study of Mo growth and induced surface structure changes on HOPG: Surface Science v. 325 no. 3 Mar 1 1995. p. 285-293.

Xu, H., Sturm, J.C., Emissivity of rough silicon surfaces, Measurement and calculations: Modeling and Simulation of Thin-Film Processing, Materials Research Society Symposium Proceedings v. 389 1995. Pittsburgh, PA, p. 301-306.

Xu, H., Sturm, J.C., Emissivity of rough silicon surfaces, measurement and calculations: Rapid Thermal and Integrated Processing IV, Materials Research Society Symposium Proceedings v. 387 1995. Pittsburgh, PA, p. 29-34.

Xu, L., Tippur, H.V., Fracture parameters for interfacial cracks, an experimental-finite element study of crack tip fields and crack initiation toughness: International Journal of Fracture v. 71 no. 4 Feb 15 1995. p. 345-363.

Xu, Mingjie, Abdou, Mohamed A., Raffray, A. Rene, Thermal conductivity of a beryllium gas packed bed: Fusion Engineering and Design v. 27 no. pt A Mar 1 1995. p. 240-246.

Xuan, Jack, Chen, Ga-Lane, Nguyen, Thanh: Effect of isotropic sub-micron crystallized texture of glass-ceramic disks on low glide, stiction, and CSS, IEEE Transactions on Magnetics v. 31 no. 6 pt 1 Nov 1995. p. 2997-2999.

Yamada, Takumi, Yamaguchi, Hiroshi, Horikoshi, Yoshiji, Evaluation of the highly coherent surface structure of the GaAs (411)A plane using scanning tunneling microscopy: Journal of Crystal Growth v. 150 no. 1-4 pt 1 May 1 1995. p. 421-424.

Yamaguchi, Hitomi, Shinmura, Takeo, Study on a new internal finishing process by the application of magnetic abrasive machining - discussion of the cylindricity: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 7 July 1995. p. 996-1000.

Yamaguchi, Hitomi, Shinmura, Takeo, New internal finishing process by application of magnetic abrasive machining (3rd report, effects of finishing pressure distribution on characteristics): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 586 Jun 1995. p. 431-437.

Yamaguchi, Hitomi, Shinmura, Takeo, Study on a new internal finishing process by application of magnetic abrasive machining (4th report, effects of diameter of magnetic abrasives on finishing characteristics): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C v. 61 no. 591 Nov 1995. p. 4470-4475.

Yamaguchi, K., Takakura, N., Imatani, S., Increase in forming limit of sheet metals by removal of surface roughening with plastic strain (balanced biaxial stretching of aluminium sheets and foils): Journal of Materials Processing Technology v. 48 no. 1-4 Jan 15 1995. p. 27-34.

Yamaguchi, Katsumi, Horaguchi, Iwao, Development of directionally aligned SiC whisker wheel: Precision Engineering v. 17 no. 1 Jan 1995. p. 5-9.

Yamakura, Hideo, Tamura, Toshio, Masuda, Masami, Ductile mode grinding of brittle materials by metal bond diamond wheels (1st report) - ductile mode grinding of optical glass: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 1 Jan 1995. p. 147-151.

Yamazaki, Takao, Sato, Mototaro, Shimizu, Yasuo, Sun, Yunhai, Tezuka, oshio, Ultraprecision orthogonal cutting mechanism of aluminum single crystals: Keikinzoku/Journal of Japan Institute of Light Metals v. 45 no. 1 Jan1995. p. 3-8.

Yang, B.X., Zhu, W., Ahn, J., Tan, H.S., Carburization and bias effects on textured (100) diamond thin films by microwave plasma enhanced chemical vapor deposition: Journal of Crystal Growth v. 151 no. 3-4 Jun 1 1995. p. 319-324.

Yang, Bin, Cheng, Yong-Hai, Wang, Zhan-Guo, Liang, Ji-Ben, Liao, Qi- Wei, Lin, Lan-Ying, Zhu, Zhan-Ping, Xu, Bo, Li, Wei, Influence of interface roughness scattering on electron mobility inGaAs-Al//0//.//3Ga//0//.//7As two dimensional electron gas (2DEG) heterostructures: Evoluation of Thin Film and Surface Structure and Morphology, Materials Research Society Symposium Proceedings v. 355 1995, p. 545-550.

Yang, C.Y., Wang, B.C., Chang, E., Wu, J.D., Influences of plasma spraying parameters on the characteristics of hydroxyapatite coatings, a quantitative study: Journal of Materials Science, Materials in Medicine v. 6 no. 5 May 1995.p. 249-257.

Yang, Jyh-Shinn, Chang, Ching-Ray, Statistical roughness and magnetic surface anisotropy: IEEE Transactions on Magnetics v. 31 no. 3 pt 1 May 1995. p. 1825-1828.

Yang, Y., Westerweele, E., Zhang, C., Smith, P., Heeger, A.J., Enhanced performance of polymer light-emitting diodes using high-surface area polyaniline network electrodes: Journal of Applied Physics v. 77 no. 2 Jan 15 1995. p. 694-698.

Yang, Yongqing, Buckius, Richard O., Surface length scale contributions to the directional and hemispherical emissivity and reflectivity: Journal of Thermophysics and Heat Transfer v. 9 no. 4 Oct-Dec 1995. p. 653-659.

Yee, Andrew L., Ong, Hockchun, Chang, R.P.H., Morphological control of diamond thin films, its influence on friction and wear: Mechanical Behavior of Diamond and Other Forms of Carbon, Materials Research Society Symposium Proceedings v. 383 1995. Pittsburgh, PA, p. 307-312.

Yee, Youngjoo, Chun, Kukjin, Lee, Jong Duk, Polysilicon surface modification technique to reduce sticking of microstructures: International Conference on Solid-State Sensors and Actuators, and Eurosensors IX, Proceedings v. 1 1995. IEEE, Piscataway, NJ. p. 206-209.

Yevtushenko, A.A., Ivanyk, E.G., Sykora, O.V., Transitive temperature processes in local friction contact: International Journal of Heat and Mass Transfer v. 38 no. 13 Sep 1995. p. 2395-2401.

Yokoyama, Kazuhiro, Hirakura, Takashi, Suzuki, Takamasa, Moriwaki, oshimichi, Evaluation of friction torque and heat quantity generated in spindle(2nd report) - influence of design parameters upon heat quantity evaluated with an improved measuring system: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 11 Nov 1995. p. 1584-1588.

Yokoyama, S., Nagata, T., Kuroda, Y., Doi, T., Namba, T., Miyake, K., iyamoto, T., Miyazaki, S., Koyanagi, M., Hirose, M., Optical waveguides on silicon chips: Journal of Vacuum Science & Technology A, Vacuum, Surfaces, and Films v. 13 no. 3 pt 1 May-Jun 1995. p. 629-635.

Yoneda, Hideki, Tsubota, Makoto, Dynamics of quantized vortices near a boundary surface under anapplied field in superfluid helium: Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B v. 61 no. 587 July 1995. p. 2365-2371.

Yoneshige, Keith K., Parks, Harold G., Raghavan, Srini, Hiskey, J.Brent, Resnick, Paul J., Deposition of copper from a buffered oxide etchant onto silicon wafers: Journal of the Electrochemical Society v. 142 no. 2 Feb 1995. p. 671-676.

Yoon, S.H., Kim, K.C., Kim, D.S., Chung, M.K., Effect of surface roughness on a turbulent wall-attaching offset jet: Experiments in Fluids v. 19 no. 1 May 1995. p. 38-42.

Yordanov, O.I., Ivanova, K., Description of surface roughness as an approximate self-affine random structure: Surface Science v. 331-333 no. pt B Jul 1 1995. p. 1043-1049.

Yoshida, Takeshi, Imafuku, Daisuke, Alay, Josep Lluis, Miyazaki, eiichi, Hirose, Masataka, Quantitative analysis of tunneling current through ultrathin gate oxides: Japanese Journal of Applied Physics, Part 2, Letters v. 34 no. 7A July15 1995. p. L903-L906.

Yoshimura, Toshiyuki, Shiraishi, Hiroshi, Okazaki, Shinji, Suppression of acid diffusion in chemical amplification resists by molecular control of base matrix polymers: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers v. 34 no. 12B Dec 1995. p. 6786-6793.

Yoshinobu, T., Iwamoto, A., Sudoh, K., Iwasaki, H., Scaling of Si/SiO//2 interface roughness: Journal of Vacuum Science & Technology B, Microelectronics Processing and Phenomena v. 13 no. 4 Jul-Aug 1995. p. 1630-1634.

Yoshinobu, T., Iwamoto, A., Sudoh, K., Iwasaki, H., Scaling analysis of a- and poly-Si surface roughness by atomic force microscopy: Fractal Aspects of Materials, Materials Research Society Symposium Proceedings v. 367 1995. Pittsburgh, PA, p. 329- 334.

Yost, F.G., Michael, J.R., Eisenmann, E.T., Extensive wetting due to roughness: Acta Metallurgica et Materialia v. 43 no. 1 Jan 1995. p. 299-305.

You, Zai-Jin, Increase of current bottom shear stress due to waves: Coastal Engineering v. 26 no. 3-4 Dec 1995. p. 291-295.

Young, Chung-Daw, Duh, Jenq-Gong, Corrosion of aluminium nitride substrates in acid, alkaline solutions and water: Journal of Materials Science v. 30 no. 1 Jan 1 1995. p. 185-195.

Yu, Y.H., Lai, M.O., Effects of gap filler and brazing temperature on fracture and fatigue of wide-gap brazed joints: Journal of Materials Science v. 30 no. 8 Apr 15 1995. p. 2101-2107.

Yu, Zhiming, Inagawa, K., Jin, Zhujing, Tribological properties of TiN and TiC films in vacuum at high temperature: Thin Solid Films v. 264 no. 1 Aug 1 1995. p. 52-58.

Yuan, Fang, Johnson, John A., Allred, David D., Todd, Robert H., Waterjet cutting of cross-linked glass: Journal of Vacuum Science & Technology A, Vacuum, Surfaces, and Films, v. 13 no. 1 Jan-Feb 1995. p. 136-139.

Yueh, Simon H., Wilson, William J., Li, Fuk K., Nghiem, Son V., icketts, William B., Polarimetric brightness temperatures of sea surfaces measured with aircraft microwave radiometers: Oceans Conference Record (IEEE) v. 2 1995. IEEE, Piscataway, NJ, p. 60-66.

Zafar, S., Liu, Q., Irene, E.A., Study of tunneling current oscillation dependence on SiO//2 thickness and Si roughness at the Si/SiO//2 interface: Journal of Vacuum Science & Technology A, Vacuum, Surfaces, and Films, v. 13 no. 1 Jan-Feb 1995. p. 47-53.

Zametaev, V.B., Sychev, V.V., Three-dimensional separation near a hump on the surface of an axisymmetric body: Izvestiya Akademii Nauk. Mekhanika Zhidkosti I Gaza no. 3 May-June1995. p. 67-79.

Zampini, D., Jennings, H.M., Shah, S.P., Characterization of the paste-aggregate interfacial transition zone surface roughness and its relationship to the fracture toughness of concrete: Journal of Materials Science v. 30 no. 12 Jun 15 1995. p. 3149-3154.

Zampini, Davide, Jennings, Hamlin M., Shah, Surendra P., Interfacial transition zone and its influence on the fracture behavior of concrete: Microstructrure of Cement-Based Systems/Bonding and Interfaces in Cementitious Materials, Materials Research Society Symposium Proceedings v. 370, 1995, Pittsburgh, PA, p. 357-366.

Zhang, Baoquan, Li, Shaofen, Determination of the surface fractal dimension for porous media by mercury porosimetry: Industrial & Engineering Chemistry Research v. 34 no. 4 Apr 1995. p. 1383- 1386.

Zhang, Bo, Umehara, Noritugu, Kato, Koji, Effect of the eccentricity between the driving shaft and the guidering on the behavior of magnetic fluid grinding of ceramic balls: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering v. 61 no. 4 Apr 1995. p. 586-590.

Zhang, L.C., Suto, T., Noguchi, H., Waida, T., Study of creep-feed grinding of metallic and ceramic materials: Journal of Materials Processing Technology v. 48 no. 1-4 Jan 15 1995. p. 267-274.

Zhang, Xuanxiong, Shi, Tiansheng, Wang, Jianxin, Zhang, Xikang, Oriented growth of a diamond film on Si(100) by hot filament chemical vapor deposition: Journal of

Crystal Growth v. 155 no. 1-2 Oct 1 1995. p. 66-69.

Zhao, Hui, Kuga, Yasuo, Ishimaru, Akira, Experimental studies on phase distributions of two co-polarized signals scattered from a two-dimensional rough surface: International Geoscience and Remote Sensing Symposium (IGARSS) v. 2, 1995. IEEE, Piscataway, NJ, 5CH35770. p. 1333-1335.

Zhao, Xuezeng, Inspecting wood surface roughness using computer vision: Proceedings of SPIE - The International Society for Optical Engineering v. 2345 1995. Bellingham, WA, p. 71-76.

Zhou, Rao S., Hashimoto, Fukuo, New rolling contact surface and ?no run-in' performance bearings: Journal of Tribology, Transactions of the ASME v. 117 no. 1 Jan 1995. p. 166-170.

Zhou, X.B., De Hosson, J. Th M., Influence of surface roughness on the wetting angle: Journal of Materials Research v. 10 no. 8 Aug 1995. p. 1984-1992.

Zhu, Changxin, Misawa, Shunji, Tsukahara, Sonoko, Initial stage of aluminum thin film growth on Si(100) surfaces as observed by scanning tunneling microscopy: Surface Science v. 325 no. 3 Mar 1 1995. p. 279-284.

Zhu, J.B., Jeon, H.I., Cha, S.S., Shin, Y.G., Lee, B.C., Lim, K.Y., uh, E.-K., Lee, H.J., Hwang, Y.G., Magneto-photoluminescence of acceptors near the interfaces of Al//xGa//1// minus //xAs/Al//yGa//1// minus //yAs heterostructures: Journal of Applied Physics v. 78 no. 3 Aug 1 1995. p. 1975-1979.

Zhu, J.X., Fiebig, M., Mitra, N.K., Numerical investigation of turbulent flows and heat transfer in a rib- roughened channel with longitudinal vortex generators: International Journal of Heat and Mass Transfer v. 38 no. 3 Feb 1995. p. 495-501.

Zietz, Stanley, Elicker, Craig, Modeling and analysis of sonar backscatter intensity for ocean bottom classification: Oceans Conference Record (IEEE) v. 3 1995. IEEE, Piscataway, NJ, p. 1836-1839.

Zinck, J.J., Chow, D.H., Measurement of photoemission oscillations during molecular beam epitaxial growth of (001) GaAs, AlAs, AlGaAs, InAs, and AlSb: Applied Physics Letters v. 66 no. 25 Jun 19 1995. p. 3524-3526.

Zou, Pei, Scherge, Matthias, Lambeth, David N., Quasi-contact testing of carbon nitride hard disk overcoats: IEEE Transactions on Magnetics v. 31 no. 6 pt 1 Nov 1995. p. 2985-2987.

Zuiker, Christopher D., Gruen, Dieter M., Krauss, Alan R., Laser-reflectance interferometry measurements of diamond-film growth: MRS Bulletin v. 20 no. 5 May 1995. p. 29-31.

Zukauskas, Algirdas, Heat transfer augmentation in turbulent boundary layer: Advances in Engineering Heat Transfer1995. Computational Mechanics Publ. p. 355-363.

Zwiggelaar, R., Bull, C.R., On the use of local and scalable Fourier transforms, fractal dimension information, and texture segmentation: IEE Conference Publication no. 410, 1995. IEE, Stevenage, UK, p. 100-104, 1995.

# 1996 A-E

Abdeladim, K., Romeo, R., Magri, S., Wind mapping of a region in the north-east of Algeria: Renewable Energy, v. 9, no. 1-4 Sep-Dec 1996. p. 789-793.

Abe, Takeshi, Reed, Michael L., Low strain sputtered polysilicon for micromechanical structures: Proceedings of the IEEE Micro Electro Mechanical Systems (MEMS) 1996. IEEE, Piscataway, NJ, 96CH35856. p. 258-262.

Ackerman, Josef Daniel, Cottrell, Catherine M., Ethier, C. Ross, Allen, D. Grant, Spelt, Jan K., Attachment strength of zebra mussels on natural, polymeric, and metallic materials: Journal of Environmental Engineering, v. 122, no. 2 Feb 1996. p. 141-148.

Adachi, Tsutomu, Ozaki, Tetsuo, Yamamoto, Takeshi, Eguchi, Yoshihiko, Matsuuchi, Kazuo, Kawai, Tatsuo, Study of the universal Strouhal number over the wide Reynolds number flow range (effect of surface roughness): JSME International Journal, Series B, Fluids and Thermal Engineering, v. 39, no. 2 May 1996. p. 335-342.

Adamczewski, J., Meijer, J., Stephan, A., Bukow, H.H., Rolfs, C., Optimization of material and shape for nuclear microprobe apertures: Nuclear Instruments & Methods in Physics Research, Section B, Beam Interactions with Materials and Atoms, v. 114, no. 1-2 Jun 2 1996. p. 172-184.

Affatigato, Mario, Osborne, Danny H., Haglund, Richard F. Jr., Effect of surface roughness on the acid etching of amorphous silica: Journal of the American Ceramic Society, v. 79, no. 3 Mar 1996. p. 688-694.

Akpan, U.O., Kujath, M.R., Stochastic response of a flexible mobile robotic manipulator structure: Computers and Structures, v. 59, no. 5 Jun 3 1996. p. 891-898.

Alauddin, M., El Baradie, M.A., Hashmi, M.S.J., End-milling machinability of Inconel 718: Proceedings of the Institution of Mechanical Engineers, Part B, Journal of Engineering Manufacture, v. 210, no. B1 1996. p. 11-23.

Alauddin, M., El Baradie, M.A., Hashmi, M.S.J., Optimization of surface finish in end milling Inconel 718: Journal of Materials Processing Technology, v. 56, no. 1-4 Jan 1996. p. 54-65.

Alcock, Jeffrey, Sorensen, O. Toft, Jensen, Stig, Kjeldsteen, Per, Comparative wear mapping techniques. I. Friction and wear mapping of tungsten carbide/silicon carbide: Wear, v. 194, no. 1-2 Jun 1996. p. 219-227.

Alcock, Jeffrey, Sorensen, O. Toft, Jensen, Stig, Kjeldsteen, Per, Comparative wear mapping techniques. II. Surface roughness and fractal dimension mapping of tungsten carbide/silicon carbide: Wear, v. 194, no. 1-2 Jun 1996. p. 228-237.

Allen, C., Bloyce, A., Bell, T., Sliding wear behaviour of ion implanted ultra high molecular weight polyethylene against a surface modified titanium alloy Ti-6Al-4V: Tribology International, v. 29, no. 6 Sep 1996. p. 527-534.

Almqvist, N., Fractal analysis of scanning probe microscopy images: Surface Science, v. 355, no. 1-3 Jun 1 1996. p. 221-228.

Alvarez, A.L., Calle, F., Sacedon, A., Calleja, E., Munoz, E., Garcia, R., Gonzalez, L., Gonzalez, Y., Colson, H.G., Kidd, P., Beanland, R., Goodhew, P., Non-uniform strain relaxation in In//xGa//1// minus //xAs layers: Solid-State Electronics:An International Journal, v. 40, no. 1-8 1996. p. 647-651.

Amada, Shigeyasu, Yamada, Hiroshi, Introduction of fractal dimension to adhesive strength evaluation of plasma-sprayed coatings: Surface & Coatings Technology, v. 78, no. 1-3 Jan 1996. p. 50-55.

Amar, J.G., and Family, Fereydoon, Characterization of surface morphology in epitaxial growth: Surface Science, v. 365, no. 1, p. 177-185, (1996).

Andrieu, Stephane, Frechard, Patrick, What information can be obtained by RHEED applied on polycrystalline films?: Surface Science, v. 360, no. 1-3 Jul 10 1996. p. 289-296.

Anon., Research is less of a black art: European Rubber Journal, v. 178, no. 5 May 1996. p. 30.

Anson, Scott, Sahay, C., Head, Linda, Constable, James, Determination of parameters affecting solder paste tack strength as measured in the IPC tack test—a classical design of experiments approach: Journal of Electronic Packaging, Transactions of the ASME, v. 118, no. 2 Jun 1996. p. 94-100.

Aoyama, Eiichi, Hirogaki, Toshiki, Inoue, Hisahiro, Gunjima, Munehisa, Nobe, Hiromichi, Kitahara, Youji, Katayama, Tsutao, Study on drilled hole quality in small diameter drilling of GFRP: Zairyo/Journal of the Society of Materials Science, Japan, v. 45, no. 5 May 1996. p. 522-526.

Arnault, J.C., Bubendorff, J.L., Pimpinelli, A., Bucher, J.P., Transition in the growth kinetics of vacancy islands on NbSe//2: Surface Science, v. 348, no. 1-2 Mar 1 1996. p. 185-191.

Arnold, M., Otto, A., Notes on localization of surface-plasmon-polaritons: Optics Communications, v. 125, no. 1-3 Apr 1 1996. p. 122-136.

Arsecularatne, J.A., Fowle, R.F., Mathew, P., Nose radius oblique tool—Cutting force and built-up edge prediction: International Journal of Machine Tools & Manufacture, v. 36, no. 5 May 1996. p. 585-595.

Arumainayagam, Christopher R., Tripa, C. Emil, Xu, Jiazhan, Yates, John T. Jr., IR spectroscopy of adsorbed dinitrogen—A sensitive probe of defect sites on Pt(111): Surface Science, v. 360, no. 1-3 Jul 10 1996. p. 121-127.

Asikainen, Timo, Ritala, Mikko, Leskela, Markku, Prohaska, Thomas, Friedbacher, Gernot, Grasserbauer, Manfred, AFM and STM studies on In//2O//3 and ITO thin films deposited by atomic layer epitaxy: Applied Surface Science, v. 99, no. 2 Jun 1996. p. 91-98.

Ataka, Tatsuaki, Muramatsu, Hiroshi, Nakajima, Kunio, Chiba, Norio, Homma, Katsunori, Fujihara, Masamichi, Design and application of scanning near-field optical/atomic force microscopy: Thin Solid Films, v. 273, no. 1-2 Feb 1996. p. 154-160.

Attar, Fouad, Hardness evaluation of thin ceramic coatings on tool steel: Surface & Coatings Technology, v. 78, no. 1-3 Jan 1996. p. 78-86.

Avanesov, V.S., Zuev, M.A., Investigation of surface topography after melting by laser beam: Proceedings of SPIE - The International Society for Optical Engineering, v. 2713 1996. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA. p. 340-343.

Aznarez, J.A., Larruquert, J.I., Mendez, J.A., Far-ultraviolet absolute reflectometer for optical constant determination of ultrahigh vacuum prepared thin films: Review of Scientific Instruments, v. 67, no. 2 Feb 1996. p. 497-502.

Baba, Toshihiko, Hamasaki, Motoshi, Watanabe, Nobuaki, Kaewplung, Pasu, Matsutani, Akihiro, Mukaihara, Toshikazu, Koyama, Fumio, Iga, Kenichi, Novel short-cavity laser with deep-grating distributed Bragg reflectors: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers, v. 35, no. 2B Feb 1996. p. 1390-1394.

Bahr, D., Falta, J., Materlik, G., Mueller, B.H., Hoegen, M. Horn-von, X-ray interface characterization of Ge delta layers on Si(0 0 1): Physica B, Condensed Matter, v. 221, no. 1-4 Apr 2 1996. p. 96-100.

Bales, G.S., Crossover scaling during submonolayer epitaxy on vicinal substrates: Surface Science, v. 356, no. 1-3 Jun 10 1996. p. L439-L444.

Bangert, H., Eisenmenger-Sittner, C., Bergauer, A., Deposition and structural properties of two-component metal coatings for tribological applications: Surface & Coatings Technology, v. 80, no. 1-2 Mar 1996. p. 162-170.

Barna, A., Menyhard, M., Study of low-energy atomic mixing by means of Auger depth profiling, XTEM and TRIM simulation on Ge/Si multilayer system: Surface and Interface Analysis, v. 24, no. 7 Jul 1996. p. 476-480.

Barnas, J., Bruynseraede, Y., Influence of interface roughness and quantum size effect on the giant magnetoresistance in magnetic layered structures: Thin Solid Films, v. 275, no. 1-2 Apr 1 1996. p. 148-151.

Barnas, J., Bruynseraede, Y., Influence of the quantum size effect and interface roughness on the giant magnetoresistance in ultrathin magnetic layered structures: Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 287-288.

Barone, M.E., Robinson, T.O., Graves, D.B., Molecular dynamics simulations of direct reactive ion etching—Surface roughening of silicon by chlorine: IEEE Transactions on Plasma Science, v. 24, no. 1 Feb 1996. p. 77-78.

Barsikow, B., Rapporteur's report, Session 4: Journal of Sound and Vibration, v. 193, no. 1 May 30 1996. p. 315-318.

Bartelt, M.C., Evans, J.W., Kinetic roughening of Fe/Fe(100) epitaxial thin films: Evolution of Epitaxial Structure and Morphology, Materials Research Society Symposium Proceedings, v. 399 1996, Pittsburgh, PA, p. 89-94.

Barth, J.V., Schuster, R., Behm, R.J., Ertl, G., System K/Au(111)—Adsorption and surface restructuring: Surface Science, v. 348, no. 3 Mar 10 1996. p. 280-286.

Bartlett, Norman, Micromachines show it is a small world after all: Design Engineering (London) Feb 1996. p. 33-34.

Barylski, Adam W., Surface contamination of cast iron after lapping: Lubrication Engineering, v. 52, no. 1 Jan 1996. p. 63-67.

Bass, F., Freilikher, V.D., Shapiro, B.Ya., Shvartser, M., Effect of the surface roughness on beam-Livingston surface barrier: Physica C, Superconductivity, v. 260, no. 3-4 Apr 10 1996. p. 231-241.

Beanland, R., Dunstan, D.J., Goodhew, P.J., Plastic relaxation and relaxed buffer layers for semiconductor epitaxy: Advances in Physics, v. 45, no. 2 Mar-Apr 1996. p. 87-146.

Belas, E., Franc, J., Toth, A., Moravec, P., Grill, R., Sitter, H., Hoschl, P., Type conversion of p-(HgCd)Te using H//2/CH//4 and Ar reactive ion etching: Semiconductor Science and Technology, v. 11, no. 7 Jul 1996. p. 1116-1120.

Bellon, P., Grandjean, Y., Martin, G., Averback, R.S., Atomistic modeling of kinetics in intermetallics: Journal De Physique IV, JP, v. 6, no. 2 Mar 1996. p. 11-14.

Bellotti, U., Campagnoli, G., Nosenzo, L., Reguzzoni, E., Spectral analysis and homogeneity characterization of quantum wells by differential reflectance modulation technique: Journal of Applied Physics, v. 79, no. 6 Mar 15 1996. p. 3205-3213.

Belopukhov, Valentine N., Zajakin, O.A., Podvigin, Vjacheslav N., Naumov, Alexander F., Form measurement sensor for rotation reflecting surfaces: Proceedings of SPIE - The International Society for Optical Engineering, v. 2713 1996. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, p. 464-468.

Benthin, Hartmut, Ertl, Th., Schmidt, D., Purucker, P., Bernimoulin, J.-P., Mueller, Gerhard J., Biocompatibility of Er:YSGG laser radiated root surfaces: Proceedings of SPIE - The International Society for Optical Engineering, v. 2623 1996. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, p. 146-154.

Bernardin, J.D., Mudawar, I., Experimental and statistical investigation of changes in surface roughness associated with spray quenching: International Journal of Heat and Mass Transfer, v. 39, no. 10 Jul 1996. p. 2023-2037.

Bernardin, John D., Mudawar, Issam, Experimental investigation into the relationship between temperature- time history and surface roughness in the spray quenching of aluminum parts: Journal of Engineering Materials and Technology, Transactions of the ASME, v. 118, no. 1 Jan 1996. p. 127-134.

Bernhard, D.M., Hsieh, C.K., Pressure drop in corrugated pipes: Journal of Fluids Engineering, Transactions of the ASME, v. 118, no. 2 Jun 1996. p. 409-410.

Bernier, Monique, Dedieu, Jean-Pierre, Fortin, Jean-Pierre, Suivi du couvert nival par radar dans les alpes francaises, application d'une approche developpee au Quebec: Canadian Journal of Remote Sensing, v. 22, no. 1 Mar 1996. p. 53-64.

Bhushan, Bharat, Contact mechanics of rough surfaces in tribology—Single asperity contact: Applied Mechanics Reviews, v. 49, no. 5 May 1996. p. 275-298.

Bhushan, Bharat, Nanotribology and nanomechanics of MEMS devices: Proceedings of the IEEE Micro Electro Mechanical Systems (MEMS) 1996. IEEE, Piscataway, NJ, USA,96CH35856. p. 91-98.

Bin-Sudin, M., Leyland, A., James, A.S., Matthews, A., Housden, J., Garside, B., Substrate surface finish effects in duplex coatings of PAPVD TiN and CrN with electroless nickel-phosphorus interlayers: Surface & Coatings Technology, v. 81, no. 2-3 Jun 1996. p. 215-224.

Bleckmann, L., Hunderi, O., Richter, W., Wold, E., Surface studies by means of 45 degree reflectometry: Surface Science, v. 351, no. 1-3 May 1 1996. p. 277-284.

Bogard, David G., Schmidt, Donald L., Tabbita, Martin, Characterization and laboratory simulation of turbine airfoil surface roughness and associated heat transfer: American Society of Mechanical Engineers (Paper) 1996. ASME, New York, 7pp 96-GT-386.

Boher, Pierre, Stehle, Jean Louis, Stehle, Marc, Godard, Bruno, Single shot excimer laser annealing of amorphous silicon for AMLCD: Applied Surface Science, v. 96-98 Apr 2 1996. p. 376-383.

Boisvert, J.B., Pultz, T.J., Brown, R.J., Brisco, B., Potential of synthetic aperture radar for large-scale soil moisture monitoring—A review: Canadian Journal of Remote Sensing, v. 22, no. 1 Mar 1996. p. 2-13.

Bongers, M.M.G., Li, Y., te Nijenhuis, J., Giling, L.J., Structural analysis of In//xGa//1// minus //xAs grown on Ge by low pressure metallorganic chemical vapour deposition: Journal of Crystal Growth, v. 162, no. 1-2 Apr 2 1996. p. 7-14.

Bozhevolnyi, Sergey I., Vohnsen, Brian, Zayats, Anatoly V., Smolyaninov, Igor I., Fractal surface characterization—

Implications for plasmon polariton scattering: Surface Science, v. 356, no. 1-3 Jun 10 1996. p. 268-274.

Bracco, G., Bruschi, L., Pedemonte, L., Tatarek, R., Anharmonic effects at the onset of the Ag(110) roughening transition: Surface Science, v. 352-354 May 15 1996. p. 964-967.

Bracco, G., Pedemonte, L., Tatarek, R., Equilibrium morphology of the Ag(110) surface: Surface Science, v. 352-354 May 15 1996. p. 968-971.

Brown, C.A., Johnsen, W.A., and Butland, R.M., Scale-sensitive fractal analysis of turned surfaces: Annals of the CIRP (Collège International pour la Récherche dans la Production Mechanique), v. 45, no. 1, p. 515ff, (1996).

Brown, Stephen R., Bruhn, Ronald L., Formation of voids and veins during faulting: Journal of Structural Geology, v. 18, no. 5 May 1996. p. 657-671.

Bruce, N.C., Ray tracing from two-dimensional randomly rough surfaces: Proceedings of SPIE - The International Society for Optical Engineering, v. 2730 1996. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, p. 286-289.

Bueno, Marie-Ange, Lamy, Bernard, Renner, Marc, Viallier-Raynard, Pierre, Tribological investigation of textile fabrics: Wear, v. 195, no. 1-2 Jul 1996. p. 192-200.

Bullis, W. Murray, Characterizing microroughness and haze on silicon wafers: MICRO, v. 14, no. 1 Jan 1996. p. 47-53.

Buness, Gunter, Berger, Herbert, Faber, Wilfried, Herrmann, Jorg, Keitel, Steffen, Kiese, Siegfried, Kroggel, Udo, Langrock, Stefan, Marquardt, Erwin, Naumann, Emanuel, Orlick, Henry, Reymann, Helge, Schauder, Volker, Scholz, Jurgen, Sitte, Gernot, et al., Manufacturing methods and manufacturing equipment: Welding Research Abroad, v. 42, no. 1 Jan 1996. p. 11-24.

Buyukozturk, Oral, Hearing, Brian, Constitutive relationships of mortar-aggregate interfaces in high performance concrete: Worldwide Advances in Structural Concrete and Masonry Structures Congress - Proceedings 1996. ASCE, New York, p. 452-461.

Cao, J., Ahmadi, G., Massoudi, M., Gravity granular flows of slightly frictional particles down an inclined bumpy chute: Journal of Fluid Mechanics, v. 316 Jun 10 1996. p. 197-221.

Cardenas-Garcia, J.F., and Severson, G.R., Optical, noncontact, automated experimental techniques for three-dimensional reconstruction of object surfaces using projection moiré, stereo imaging, and phase-measuring profilometry: Denver, CO, U.S. Geological Survey, Open-File Report 95-433, 130 p. , (1996).

Carro, P., Creus, A. Hernandez, Schilardi, P., Gonzalez, S., Salvarezza, R.C., Arvia, A.J., Topographic changes of polycrystalline Ag and Cu electrodes in acid aqueous solutions resulting from a prolonged application of the potential reversal technique: Journal of the Electrochemical Society, v. 143, no. 7 Jul 1996. p. 2294-2305.

Carter, G., Effects of ion bombardment sputtering and atomic transport related roughening and smoothing on depth profiling resolution: Vacuum, v. 47, no. 5 May 1996. p. 409-420.

Caticha, A., Caticha-Ellis, S., Thermal neutron interferometer of the Fabry-Perot type: Physica Status Solidi (A) Applied Research, v. 153, no. 1 Jan 1996. p. 29-46.

Cavus, A., Zeng, L., Tamargo, M.C., Bambha, N., Semendy, F., Gray, A., ZnCdSe/ZnCdMgSe quantum wells on InP substrates for visible emitters: Applied Physics Letters, v. 68, no. 24 Jun 10 1996. p. 3446-3448.

Cerre, N., de Fornel, F., Goudonnet, J.P., Ladan, P.R., Guerrin, Ph., Spatial spectroscopy with the reflection scanning microscope: Journal of the Optical Society of America A, Optics and Image Science, and Vision, v. 13, no. 7 Jul 1996. p. 1357-1361.

Chan, Tsz-King, Kuga, Yasuo, Ishimaru, Akira, Le, Charlie T.C., Experimental studies of bistatic scattering from two-dimensional conducting random rough surfaces: IEEE Transactions on Geoscience and Remote Sensing, v. 34, no. 3 May 1996. p. 674-680.

Chen, C.L., Tsong, Tien T., Mitchell, T.E., Surface diffusion and surface atomic roughness on Ir(001) surface and terraces: Applied Surface Science, v. 94-95 Mar 2 1996. p. 224-230.

Chen, J.T., Thomas, E.L., Use of force modulation microscopy to investigate block copolymer morphology: Journal of Materials Science, v. 31, no. 10 May 15 1996. p. 2531-2538.

Chevrier, J., Huang, L., Zeppenfeld, P., Comsa, G., Characterization by scanning tunneling microscopy of the oxygen induced restructuring of Au(111): Surface Science, v. 355, no. 1-3 Jun 1 1996. p. 1-12.

Chiarello, G., Barberi, R., Amoddeo, A., Caputi, L.S., Colavita, E., XPS and AFM characterization of a vanadium oxide film on TiO//2(100) surface: Applied Surface Science, v. 99, no. 1 May 1996. p. 15-19.

Choi, S.W., Lee, J.H., Baek, J.H., Lee, E.H., Lee, B., Optimal growth of InGaAs/InAlAs distributed Bragg reflectors lattice- matched on InP substrates: Optoelectronic Materials, Ordering, Composition Modulation, and Self-Assembled Structures, Materials Research Society Symposium Proceedings, v. 417 1996, Pittsburgh, PA, p. 331-336.

Choudhury, I.A., El-Baradie, M.A., Analysis of model building techniques for the development of machinability database systems: International Journal of Production Research, v. 34, no. 5 May 1996. p. 1261-1277.

Christiansen, S., De Chiffre, L., Topographic investigation of the wear resistance of PTFE seals in sliding contact with ceramic materials: Tribology Transactions, v. 39, no. 2 Apr 1996. p. 434-440.

Chun, Moon-Hyun, Kang, Myeong-Gie, Effects of heat exchanger tube geometries on nucleate pool boiling heat transfer in a scaled in-containment refueling water storage tank: International Communications in Heat and Mass Transfer, v. 23, no. 1 Jan- Feb 1996. p. 23-34.

Chung, C.K., Hwang, J., Effect of Si/Ir codeposition ratio on the Ir silicide/Si(100) interface roughness: Materials Chemistry and Physics, v. 43, no. 2 Feb 1996. p. 191-194.

Chyu, M.K., Natarajan, V., Heat transfer on the base surface of three-dimensional protruding elements: International Journal of Heat and Mass Transfer, v. 39, no. 14 Sep 1996. p. 2925-2935.

Clevenger, Wallace W., Tape microfinishing—The latest innovation: Abrasives Feb-Mar 1996. 2pp.

Cochran, T.W., Calculate pipeline flow of compressible fluids: Chemical Engineering (New York), v. 103, no. 2 Feb 1996. 4pp.

Coker, Scott A., Shin, Yung C., In-process control of surface roughness due to tool wear using a new ultrasonic system: International Journal of Machine Tools & Manufacture, v. 36, no. 3 Mar 1996. p. 411-422.

Colbeck, Samuel C., Capillary bonding of wet surfaces: Surface & Coatings Technology, v. 81, no. 2-3 Jun 1996. p. 209-214.

Cox, Kevin, Chonko, Mark, Honcik, Chris, VanDyke, Shelly, Effect of HF processing on gate oxide degradation in aggressive poly buffered LOCOS isolation: IEEE Electron Device Letters, v. 17, no. 2 Feb 1996. p. 50-52.

Crenshaw, Melissa M., Design applications of embossed materials: Proceedings of SPIE - The International Society for Optical Engineering, v. 2652 1996. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, p. 244-247.

Cuemo, R., Makse, H.A., Tomassone, S., Harrington, S.T., Stanley, H.E., Model for ion-sputtering—From pattern formation to rough surfaces: Disordered Materials and Interfaces, Materials Research Society Symposium Proceedings, v. 407 1996, Pittsburgh, PA, p. 307-312.

Cullis, A.G., Strain-induced modulations in the surface morphology of heteroepitaxial layers: MRS Bulletin, v. 21, no. 4 Apr 1996. p. 21-26.

Cyra, Grzegorz, Tanaka, Chiaki, Nakao, Tetsuya, Effect of router tool wear on AE count rate: Zairyo/Journal of the Society of Materials Science, Japan, v. 45, no. 4 Apr 1996. p. 403-409.

da Cunha, F.R., Hinch, E.J., Shear-induced dispersion in a dilute suspension of rough spheres: Journal of Fluid Mechanics, v. 309 Feb 25 1996. p. 211-223.

Davis, G.D., Whisnant, P.L., Groff, G.B., Shaffer, D.K., Venables, J.D., Plasma sprayed coatings as surface treatments of aluminum adherends: International SAMPE

Symposium and Exhibition (Proceedings), v. 41, no. 1 1996. p. 291-302.

de Avillez, R.R., Lopes, M.F.S., Silva, A.L.M., Stereological properties of the intermetallic formed at the nickel- liquid tin interface: Materials Science & Engineering A, Structural Materials, Properties, Microstructure and Processing, v. A205, no. 1-2 Jan 1996. p. 209-213.

de Boer, Dick K.G., Leenaers, Ann J.G., Probing interface roughness by X-ray scattering: Physica B, Condensed Matter, v. 221, no. 1-4 Apr 2 1996. p. 18-26.

de Sandro, J.P., Jones, J.K., Shepherd, D.P., Hempstead, M., Wang, J., Tropper, A.C., Non-photorefractive CW Tm-indiffused Ti:LiNbO//3 waveguide laser operating at room temperature: IEEE Photonics Technology Letters, v. 8, no. 2 Feb 1996. p. 209-211.

de Vos, P.H., Railway noise—The physics of airborne sound generation and propagation: Journal of Sound and Vibration, v. 193, no. 1 May 30 1996. p. 77-82.

Deng, Hui, Hackam, R., Cherney, E.A., Influence of thickness, substrate type, amount of silicone fluid and solvent type on the electrical performance of RTV silicone rubber coatings: IEEE Transactions on Power Delivery, v. 11, no. 1 Jan 1996. p. 431-441.

Deyhle, H., Bippes, H., Disturbance growth in an unstable three-dimensional boundary layer and its dependence on environmental conditions: Journal of Fluid Mechanics, v. 316 Jun 10 1996. p. 73-113.

Di Ilio, A., Paoletti, A., Tagliaferri, V., Veniali, F., Experimental study on grinding of silicon carbide reinforced aluminum alloys: International Journal of Machine Tools & Manufacture, v. 36, no. 6 Jun 1996. p. 673-685.

Dickson, Robert J., Lepoutre, Pierre, Mechanical adhesion in coated paper—Effect of roughness and coat weight: International Paper and Coating Chemistry Symposium, Proceedings 1996. TAPPI Press, Norcross, GA, p. 163-166.

Dings, P.C., Dittrich, M.G., Roughness on Dutch railway wheels and rails: Journal of Sound and Vibration, v. 193, no. 1 May 30 1996. p. 103-112.

Do, Lee-M., Oyamada, Mitsuaki, Koike, Amane, Han, Eun-M., Yamamoto, Noritaka, Morphological change in the degradation of Al electrode surfaces of electroluminescent devices by fluorescence microscopy and AFM: Thin Solid Films, v. 273, no. 1-2 Feb 1996. p. 209-213.

Dong, J.-J., Pan, Y.-W., Hierarchical model of rough rock joints based on micromechanics: International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts, v. 33, no. 2 Feb 1996. p. 111-123.

Dong, Young Jang, Choi, Young-Gu, Kim, Hong-Gil, Hsiao, Alex., Study of the correlation between surface roughness and cutting vibrations to develop an on-line roughness measuring technique in hard turning: International Journal of Machine Tools & Manufacture, v. 36, no. 4 Apr 1996. p. 453-464.

Dove, J.E., Frost, J.D., Dove, P.M., Geomembrane microtopography by atomic force microscopy: Geosynthetics International, v. 3, no. 2 1996. p. 227-245.

Drach, V., Sack, N., Fricke, J., Transient heat transfer from surfaces of defined roughness into liquid nitrogen: International Journal of Heat and Mass Transfer, v. 39, no. 9 Jun 1996. p. 1953-1961.

Dunlop, I., McNab, A., Geometrical analysis of segmented ultrasonic flaw regions: Nondestructive Testing and Evaluation, v. 12, no. 5 1996. p. 285-303.

Eisenbarth, E., Meyle, J., Nachtigall, W., Breme, J., Influence of the surface structure of titanium materials on the adhesion of fibroblasts: Biomaterials, v. 17, no. 14 Jul 1996. p. 1399-1403.

Ekino, T., Doukan, T., Fujii, H., Nakamura, F., Sakita, S., Kodama, M., Fujita, T., Superconducting energy gap of La//1//.//8//5Sr//0//.//1//5CuO//4 single crystals from break-junction tunneling: Physica C, Superconductivity, v. 263, no. 1-4 May 1996. p. 249-252.

Ektessabi, A.M., Kimura, Hiroyuki, Kakino, Yoshiaki, Surface observation and roughness analysis of TiO//2, Al//2O//3 thin films prepared by ion beam processing method using atomic force microscope: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering, v. 62, no. 6 Jun 1996. p. 876-880.

El Baradie, M.A., Cutting fluids, Part I. Characterisation: Journal of Materials Processing Technology, v. 56, no. 1-4 Jan 1996. p. 786-797.

El-Dessouky, H., Enhancement of the thermal performance of a wet cooling tower: Canadian Journal of Chemical Engineering, v. 74, no. 3 Jun 1996. p. 331-338.

Elliott, W.C., Miceli, P.F., Tse, T., Stephens, P.W., Orientation dependence of homoepitaxy—An in situ X-ray scattering study of Ag: Physica B, Condensed Matter, v. 221, no. 1-4 Apr 2 1996. p. 65-69.

Elmouhssine, O., Freyss, M., Kruger, P., Parlebas, J.C., Demangeat, C., Khalifeh, J., Vega, A., Mokrani, A., Spin-polarization of thin Mn films on Fe(107): Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 199-201.

Elsherbeni, Atef Z., Rodriguez-Pereyra, Vincente, Smith, Charles E., Effect of an air gap on the coupling between two planar microstrip lines: Journal of the Franklin Institute, v. 333B, no. 2 Mar 1996. p. 201-223.

Enthoven, J., Spikes, H.A., Infrared and visual study of the mechanisms of scuffing: Tribology Transactions, v. 39, no. 2 Apr 1996. p. 441-447.

Evans-Lutterodt, K.W., Tang, Mau-Tsu, Spectral sensitivities of x-ray diffraction to the roughness of Si/SiO//2 interfaces: Evolution of Epitaxial Structure and Morphology, Materials Research Society Symposium Proceedings, v. 399 1996, Pittsburgh, PA, p. 531-536.

Ezugwu, E.O., Leong, V.K., Surface abuse associated with finish turning of gray cast iron with ceramic tools: Tribology Transactions, v. 39, no. 2 Apr 1996. p. 362-367.

# 1996 F-K

Farkas, Diana, Politano, Rodolfo, Oppenheim, Ivette C., Atomistic structure of stepped surfaces: Surface Science, v. 360, no. 1-3 Jul 10 1996. p. 282-288.

Feng, Y.P., Sinha, S.K., Melendres, C.A., Lee, D.D., X-ray off-specular reflectivity studies of electrochemical pitting of Cu surfaces in sodium bicarbonate solution: Physica B, Condensed Matter, v. 221, no. 1-4 Apr 2 1996. p. 251-256.

Fernandez, V., Schindler, K.-M., Schaff, O., Hofmann, Ph., Theobald, A., Bradshaw, A.M., Fritzsche, V., Davis, R., Woodruff, D.P., Structure determination of a CO/O coadsorption phase on Ni(111): Surface Science, v. 351, no. 1-3 May 1 1996. p. 1-12.

Fiore, A., Berger, V., Rosencher, E., Laurent, N., Theilmann, S., Vodjdani, N., Nagle, J., Huge birefringence in selectively oxidized GaAs/AlAs optical waveguides: Applied Physics Letters, v. 68, no. 10 Mar 4 1996. p. 1320-1322.

Fjaerestad, John Ove, Brataas, Arne, Bauer, Gerrit E., Semiclassical scattering theory of parallel transport in metallic magnetic multilayers: Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 387-388.

Flueraru, C., Gartner, M., Rotaru, C., Dascalu, D., Andriescu, G., Cosmin, P., Spectro-ellipsometric investigations of polycrystalline silicon surface roughness: Microelectronic Engineering, v. 31, no. 1-4 Feb 1996. p. 309-316.

Fontana, Eduardo, Analysis of optical surfaces by means of surface plasmon spectroscopy: IEEE Transactions on Instrumentation and Measurement, v. 45, no. 2 Apr 1996. p. 399-405.

Foresi, J.S., Black, M.R., Agarwal, A.M., Kimerling, L.C., Losses in polycrystalline silicon waveguides: Applied Physics Letters, v. 68, no. 15 Apr 8 1996. p. 2052-2054.

Fork, D.K., Anderson, G.B., Boyce, J.B., Johnson, R.I., Mei, P., Capillary waves in pulsed excimer laser crystallized amorphous silicon: Applied Physics Letters, v. 68, no. 15 Apr 8 1996. p. 2138-2140.

Fork, D.K., Armani-Leplingard, F., Lui, M., McFarlane, R.A., Optical properties of epitaxial LaF//3/SrF//2/GaAs(111) heterostructure waveguides fabricated by molecular beam epitaxy: Journal of Lightwave Technology, v. 14, no. 4 Apr 1996. p. 611-615.

Forseth, T., Helle, T., Principles and application of a method for assessing detailed paper surface topography: Annual Meeting, Canadian Pulp and Paper Association, Montreal, Que., Technical Section Preprints, Pt. B, 1996, p. B287-B291.

Francis, D.A., Chang-Hasnain, C.J., Eason, K., Effect of facet roughness on etched-facet semiconductor laser diodes: Applied Physics Letters, v. 68, no. 12 Mar 18 1996. p. 1598-1600.

Francis, D.A., Chang-Hasnain, C.J., Effect of facet roughness on etched-facet semiconductor laser diodes: Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting 1996. p. 423-424.

Freeman, Anthony, Evans, Diane L., van Zyl, Jakob J., SAR applications in the 21st century: AEU, Archiv für Elektronik und Uebertragungstechnik (International Journal of Electronics and Communications), v. 50, no. 2 Mar 1996. p. 79-84.

Fukushima, Nobuto, Katai, Hiroak, Wada, Toshiaki, Horiike, Yasuhiro, High-rate and smooth surface etching of Al//2O//3-TiC employing inductively coupled plasma (ICP): Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers, v. 35, no. 4B Apr 1996. p. 2512-2515.

Furukawa, Masakazu, Yamamoto, Yoshito, Ikakura, Hiroshi, Tanaka, Nobuo, Hashimoto, Masayuki, Sano, Atsushi, Shingubara, Shoso, Surface morphologies of sputter-deposited aluminum films studied using a high-resolution phase-measuring laser interferometric microscope: Applied Optics, v. 35, no. 4 Feb 1 1996. p. 701-707.

Gao, Y., Chambers, S.A., Effect of substrate orientation on the crystal quality and surface roughness of Nb-doped TiO//2 epitaxial films on TiO//2: Journal of Materials Research, v. 11, no. 4 Apr 1996. p. 1025-1029.

Garcia-Ayuso, G., Vazquez, L., Martinez-Duart, J.M., Atomic force microscopy (AFM) morphological surface characterization of transparent gas barrier coatings on plastic films: Surface & Coatings Technology, v. 80, no. 1-2 Mar 1996. p. 203-206.

Garratt, J., Mills, M., Measurement of the roughness of supersmooth surfaces using a stylus instrument: Nanotechnology, v. 7, no. 1 Mar 1996. p. 13-20.

Geng, Huaibin, Hugh, Q., Gwyn, I., Brisco, Brian, Boisvert, Johanne, Brown, R.J., Mapping of soil moisture from C-band radar images: Canadian Journal of Remote Sensing, v. 22, no. 1 Mar 1996. p. 117-126.

Gerland, M., Dufour, J.P., Fouilland-Paille, L., Violan, P., Presles, H.N., Mendez, J., Fatigue behaviour in a plastic strain-controlled mode of an austenitic stainless steel treated by explosive: Journal of Materials Science, v. 31, no. 8 Apr 15 1996. p. 2071-2080.

Gilley, J.E., Kottwitz, E.R., Random roughness assessment by the pin and chain method: Applied Engineering in Agriculture, v. 12, no. 1 Jan 1996. p. 39-43.

Gjonnes, Liv, Development of surface topography during cold rolling of twin-roll cast aluminum: Wear, v. 192, no. 1-2 Mar 1996. p. 216-227.

Gnanamoorthy, R., Hanada, S., Kamata, K., Ductile-phase toughening and fatigue crack growth in Nb//3Al base alloys: Scripta Materialia, v. 34, no. 6 Mar 15 1996. p. 999-1003.

Goldshtein, A., Shapiro, M., Gutfinger, C., Mechanics of collisional motion of granular materials. Part 3. Self-similar shock wave propagation: Journal of Fluid Mechanics, v. 316 Jun 10 1996. p. 29-51.

Golis, Bogdan, Pilarczyk, Jan W., Blazejowski, Zbigniew, Filipczyk, Eugeniusz, Drawing practice of steel wires with pressure dies: Proceedings of the Annual Convention of the Wire Association International 1996. Wire Assoc Int Inc, Guilford, CT, p. 78-91.

Gollion, Ph., Grenet, G., Determination of fractured steel surface roughness by atomic force microscopy using fractal-based approaches: Surface and Interface Analysis, v. 24, no. 4 Apr 1996. p. 282-285.

Golubovic, Leonardo, Interfacial coarsening in an MBE growth without slope selection: Evolution of Epitaxial Structure and Morphology, Materials Research Society Symposium Proceedings, v. 399 1996, Pittsburgh, PA, p. 257-262.

Gong, Wanmin, Taylor, Peter A., Dornbrack, Andreas, Turbulent boundary-layer flow over fixed aerodynamically rough two-dimensional sinusoidal waves: Journal of Fluid Mechanics, v. 312 Apr 10 1996. p. 1-37.

Gong, Z.H., Grepstad, J.K., Andersen, S., Bardal, A., Microstructure of YBa//2Cu//3O//7// minus // delta /Ag bilayers grown in situ on step-edge SrTiO//3 substrates: Epitaxial Oxide Thin Films II, Materials Research Society Symposium Proceedings, v. 401 1996, Pittsburgh, PA, p. 345-350.

Gorinevsky, Dimitry, Heaven, Michael, Hagart-Alexander, Claud, Kean, Max, Morgan, Scott, New algorithms for intelligent identification of paper alignment and nonlinear shrinkage: Control Systems, Preprints, Conference 1996. TAPPI Press, Norcross, GA, p. 41-47.

Grassie, Stuart L., Short wavelength rail corrugation—Field trials and measuring technology: Wear, v. 191, no. 1-2 Jan 1996. p. 149-160.

Griffiths, Brian J., Gawne, David T., Dong, Guishu, Erosion of steel surfaces by grit-blasting as a preparation for plasma spraying: Wear, v. 194, no. 1-2 Jun 1996. p. 95-102.

Grimal, J.M., Chartier, P., Lehuede, P., X-ray reflectivity—A new tool for the study of glass surfaces: Journal of Non-Crystalline Solids, v. 196 Mar 2 1996. p. 128-133.

Gron, Johan, Beghello, Luciano, Cracking and roughening of coated paper surfaces: Paperi ja Puu/Paper and Timber, v. 78, no. 3 Mar 1996. p. 121-127.

Grzesik, W., Revised model for predicting surface roughness in turning: Wear, v. 194, no. 1-2 Jun 1996. p. 143-148.

Guo, S.M., Jones, T.V., Lock, G.D., Dancer, S.N., Computational prediction of heat transfer to gas turbine nozzle guide vanes with roughened surfaces: American Society of Mechanical Engineers (Paper) 1996. ASME, New York, 11pp 96-GT-388.

Guo, X.L., Liu, Z.G., Liu, J.M., Zhu, S.N., Zhu, Y.Y., (012) textured LiNbO//3 waveguiding films grown on SiO//2 by pulsed laser deposition technique: Physica Status Solidi (A) Applied Research, v. 154, no. 2 Apr 1996. p. 615-622.

Gupta, J.L., Deheri, G.M., Effect of roughness on the behaviour of squeeze film in a spherical bearing: Tribology Transactions, v. 39, no. 1 Jan 1996. p. 99-102.

Guyot, M., Lisfi, A., Krishnan, R., Porte, M., Rougier, P., Cagan, V., Ferrimagnetic thin films prepared by pulsed laser deposition: Applied Surface Science, v. 96-98 Apr 2 1996. p. 802-806.

Gwo, S., Ohno, H., Miwa, S., Fan, J.-F., Tokumoto, H., Structural and doping properties of molecular beam epitaxy-grown Si- doped GaAs(001) surfaces: Surface Science, v. 357-358, no. 1-3 Jun 20 1996. p. 446-450.

Hailey, J.L., Ingham, E., Stone, M., Wroblewski, B.M., Fisher, J., Ultra-high molecular weight polyethylene wear debris generated in vivo and in laboratory tests, the influence of counterface roughness: Proceedings of the Institution of Mechanical Engineers, Part H, Journal of Engineering in Medicine, v. 210, no. 1 1996. p. 3-10.

Hall, M.J., Small catchment area flood estimation: Proceedings of the Institution of Civil Engineers, Water Maritime and Energy, v. 118, no. 2 Jun 1996. p. 66-76.

Han, S.-W., Pitney, J.A., Miceli, P.F., Covington, M., Greene, L.H., Godbole, M.J., Lowndes, D.H., X-ray reflectivity study of thin film oxide superconductors: Physica B, Condensed Matter, v. 221, no. 1-4 Apr 2 1996. p. 235-237.

Hara, Seiichiro, Tsukada, Tadao, Ito, Masatoshi, Conditions to apply the phase corrected filter to traced profiles for roughness profiles (1st report) - application of the Gaussian high-pass digital filter: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering, v. 62, no. 4 Apr 1996. p. 594-598.

Heffelfinger, J.R., Bench, M.W., Carter, C.B., On the roughening of ceramic surfaces: Evolution of Epitaxial Structure and Morphology, Materials Research Society Symposium Proceedings, v. 399 1996, Pittsburgh, PA, p. 263-268.

Heilmann, Ralf K., Suter, Robert M., Kinetic roughening of quenched xenon films: Disordered Materials and Interfaces, Materials Research Society Symposium Proceedings, v. 407 1996, Pittsburgh, PA, p. 239-244.

Helali, M., Hashmi, M.S.J., Production of free standing objects by high velocity oxy-fuel (HVOF) thermal spraying process: Journal of Materials Processing Technology, v. 56, no. 1-4 Jan 1996. p. 431-438.

Herner, S.B., Gossmann, H.-J., Jones, K.S., Titanium silicidation induced point defects in Si: Silicide Thin Films - Fabrication, Properties and Applications, Materials Research Society Symposium Proceedings, v. 402 1996, Pittsburgh, PA, p. 143-148.

Heyvaert, I., Krim, J., Van Haesendonck, C., Bruynseraede, Y., Surface morphology and kinetic roughening of Ag on Ag(111) studied with scanning tunneling microscopy: Physical Review E. Statistical Physics, Plasmas, Fluids, and Related Interdisciplinary Topics, v. 54, no. 1 Jul 1996. p. 349-353.

Higa, Akira, Hatta, Akimitsu, Ito, Toshimichi, Maehama, Takehiro, Toguchi, Minoru, Hiraki, Akio, Homoepitaxial diamond synthesis by DC arc plasma jet chemical vapor deposition: Japanese Journal of Applied Physics, Part 2, Letters, v. 35, no. 5A May 1 1996. p. L577-L580.

Himeshima, Katsuyuki, Enomoto, Akihito, Hara, Takanori, Fujine, Toshiyuki, Satou, Yasuhito, Kitaya, Akio, Kimura, Takashi, Development of thin film laminated head for digital VTR: Shapu Giho/Sharp Technical Journal, no. 64 Apr 1996. p. 35-41.

Hirata, Atsushi, Yokotsuka, Tomohito, Ohtsuki, Yutaka, Yoshikawa, Masanori, Diamond synthesis on a substrate rotated at high speed: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering, v. 62, no. 5 May 1996. p. 671-675.

Hisaki, Tatsuya, Takeuchi, Yoshimi, 6-axis control finishing for character line: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering, v. 62, no. 2 Feb 1996. p. 230-235.

Ho, E.M., Petford-Long, A.K., Magnetoresistance in sputtered Fe/Cr multilayer films: Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 65-66.

Hobbs, S.Y., Development of flow instabilities during the injection molding of multicomponent resins: Polymer Engineering and Science, v. 36, no. 11 Mid-Jun 1996. p. 1489-1494.

Hoffs, A., Drost, U., Bolcs, A., Heat transfer measurements on a turbine airfoil at various Reynolds numbers and turbulence intensities including effects of surface roughness: American Society of Mechanical Engineers (Paper) 1996. ASME, New York, 8pp 96-GT-169.

Homma, Yoshikazu, Osaka, Jiro, Inoue, Naohisa, Secondary electron imaging of nucleation and growth of GaAs: Surface Science, v. 357-358, no. 1-3 Jun 20 1996. p. 441-445.

Hong, J.K., Spilsbury, D., Cowlam, N., Hatton, H.J., Gibbs, M.R.J., Optimisation of neutron reflectometry in the measurement of magnetic multilayers by means of 'invisible' spacer layers: Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 55-57.

Horaguchi, Iwao, Afaghani, J.E.D., Yamaguchi, Katsumi, Nakamoto, Takeshi, Study on wear characteristics of SiC whisker reinforced plastics and their application: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C, v. 62, no. 595 Mar 1996. p. 1054-1059.

Hornberger, Helga, Weissmann, Rudolf, Lutz, Norbert, Machining of silica glasses using excimer laser radiation: Glass Science and Technology, v. 69, no. 2 Feb 1996. p. 44-49.

Hoyashita, Shigeru, Hashimoto, Munetoh, Kamo, Hidetoshi, Matsunoshita, Tomohiro, Improvement of surface durability of case-carburized and hardened gear (Effects of shot peening and barrelling processes): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C, v. 62, no. 595 Mar 1996. p. 1106-1112.

Huang, C.S., Tseng, T.Y., Chung, B.C., Tsai, C.H., Cheng, H.F., Lin, I.N., Mirror-smooth YBa//2Cu//3O//7// minus //x superconducting films deposited by plasma-enhanced pulsed laser deposition technique: Applied Surface Science, v. 96-98 Apr 2 1996. p. 735-738.

Huang, L., Zeppenfeld, P., Chevrier, J., Comsa, G., Surface morphology of Au(111) after exposure to oxygen at high temperature and pressure: Surface Science, v. 352-354 May 15 1996. p. 285-289.

Huang, S., Ming, Z.H., Soo, Y.L., Kao, Y.H., Tanaka, M., Munekata, H., X-ray scattering and absorption studies of MnAs thin films grown by MBE on GaAs (001) substrates: Evolution of Epitaxial Structure and Morphology, Materials Research Society Symposium Proceedings, v. 399 1996, Pittsburgh, PA, p. 29-34.

Huang, S., Ming, Z.H., Soo, Y.L., Kao, Y.H., Tanaka, M., Munekata, H., X-ray scattering and absorption studies of MnAs/GaAs heterostructures: Journal of Applied Physics, v. 79, no. 3 Feb 1 1996. p. 1435-1440.

Hull, D., Influence of stress intensity and crack speed on fracture surface topography—Mirror to mist transition: Journal of Materials Science, v. 31, no. 7 Apr 1 1996. p. 1829-1841.

Hwang, Jenn-Jiang, Wu, Sheng-Jiunn, Liou, Tong-Miin, Heat transfer in a low-aspect ratio rectangular channel with thermally- active and -nonactive perforated ribs: Journal of the Chinese Society of Mechanical Engineers, Transactions of the Chinese Institute of Engineers, Series C/Chung-Kuo Chi Hsueh Kung Ch'eng Hsuebo Pao, v. 17, no. 2 Apr 1996. p. 165-172.

I Wu, Tair, Kuo Wu, Jiann, Effects of surface condition and metallurgical practice on the corrosion behaviour of AA 7075 aluminium alloy: Corrosion Prevention & Control, v. 43, no. 1 Feb 1996. p. 20-26.

Ichida, Yoshio, Kishi, Kozo, Suzuki, Masaharu, Nikaido, Tomoki, Grinding characteristics of polycrystalline CBN abrasive grits having an ultrafine crystal structure: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C, v. 62, no. 595 Mar 1996. p. 1169-1175.

Ichimura, Yoshikatsu, Kishino, Katsumi, Haraguchi, Masaru, Yoshida, Atsushi, Effect of ZnSe/ZnSSe superlattice buffer on improved emission efficiency of ZnCdSe/MgZnSSe quantum wells for MgZnSSe-based blue/green lasers: Journal of Crystal Growth, v. 159, no. 1-4 Feb 2 1996. p. 586-590.

Ikemiya, Norihito, Kitamura, Akifumi, Hara, Shigeta, Surface structures of MgO(100) and SrTiO//3(100) as revealed by atomic force microscopy: Journal of Crystal Growth, v. 160, no. 1-2 Mar 1 1996. p. 104-110.

Ikuta, Kazuyuki, Toyoshima, Yasutake, Yamasaki, Satoshi, Matsuda, Akihisa, Tanaka, Kazunobu, STM and Raman study of the evolution of the surface morphology in mu c- Si:H: Journal of Non-Crystalline Solids, v. 198-200, no. pt 2 May 2 1996. p. 863-866.

Ilyin, A.M., Golovanov, V.N., Investigation of the grain boundary elemental composition of the low- alloy steel: Physica Status Solidi (A) Applied Research, v. 153, no. 1 Jan 1996. p. 93-100.

Imado, Keiji, Miyagawa, Hiroomi, Miura, Atuyoshi, Hirano, Fujio, Development of repetition impact tester and its application: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C, v. 62, no. 596 Apr 1996. p. 1632-1639.

Imaki, Masao, Mizuno, Seigi, Tochihara, Hiroshi, Surface structure sequences formed on Ag(001) with increasing alkali- metal coverages at room temperature: Surface Science, v. 357-358, no. 1-3 Jun 20 1996. p. 145-149.

Inokuti, Yukio, Suzuki, Kazuhiro, Kobayashi, Yasuhiro, Variation of Ar bombardment prior to TiN coating on magnetic properties of silicon steel sheet: Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals, v. 60, no. 2 Feb 1996. p. 212-217.

Ishikawa, Tomonori, Tanaka, Nobuyuki, Lopez, Maximo, Matsuyama, Isamu, Effects of GaAs-surface roughness on the electron-beam patterning characteristics of a surface-oxide layer: Japanese Journal of Applied Physics, Part 2, Letters, v. 35, no. 5B May 15 1996. p. L619-L622.

ISO, Surface roughness and waviness - Motif method: Geneva, International Organisation for Standardisation, ISO standard 12085. 1996a.

ISO, Geometrical product specification (GPS) - Surface texture; Profile method - Terms, definitions and surface texture parameters: Geneva, International Organisation for Standardisation, ISO standard 4287. 1996b.

Izawa, Norihisa, Lu, Yuxiong, Nishida, Yoshinori, Shear strength at the interface between aluminum and ceramics in model composites fabricated by squeeze casting: Materials Transactions, JIM, v. 37, no. 3 Mar 1996. p. 259-264.

Izquierdo, R., Hanus, F., Lang, Th., Ivanov, D., Meunier, M., Laude, L., Currie, J.F., Yelon, A., Pulsed laser deposition of NASICON thin films: Applied Surface Science, v. 96-98 Apr 2 1996. p. 855-858.

Jain, M., Lloyd, D.J., Macewen, S.R., Hardening laws, surface roughness and biaxial tensile limit strains of sheet aluminum alloys: International Journal of Mechanical Sciences, v. 38, no. 2 Feb 1996. p. 219-232.

Jansson, Per-Ake, Anti-plane elastic wave scattering from a rough volumetric crack: International Journal of Solids and Structures, v. 33, no. 23 Sep 1996. p. 3463-3476.

Jay Chey, S., Van Nostrand, Joseph E., Cahill, David G., Coarsening and slope selection during crystal growth and etching of Ge(001): Evolution of Epitaxial Structure and Morphology, Materials Research Society Symposium Proceedings, v. 399 1996, Pittsburgh, PA, p. 221-228.

Jayanti, S., Hewitt, G.F., Response of turbulent flow to abrupt changes in surface roughness and its relevance in horizontal annular flow: Applied Mathematical Modelling, v. 20, no. 3 Mar 1996. p. 244-251.

Jayanti, S., Kandlbinder, T., Hewitt, G.F., Turbulent flow in a pipe with intermittent rough patches—An analogue of annular two-phase flow: Chemical Engineering Communications, v. 141-142 1996. p. 237-259.

Jeng, U., Esibov, L., Crow, M.L., Steyerl, A., Neutron reflectometry study on an interface of octane and D//2O at low surfactant (C//1//0E//4) concentration: Physica B, Condensed Matter, v. 221, no. 1-4 Apr 2 1996. p. 168-173.

Jensen, Mogens H., Simulating models of turbulence and interfaces: Mathematics and Computers in Simulation, v. 40, no. 3-4 April 1996. p. 193-206.

Jeon, Joong S., Raghavan, Srini, Carrejo, Juan P., Effect of temperature on the interaction of silicon with nonionic surfactants in alkaline solutions: Journal of the Electrochemical Society, v. 143, no. 1 Jan 1996. p. 277-283.

Jergel, M., Holy, V., Majkova, E., Luby, S., Senderak, R., Interface roughness correlation in tungsten/silicon multilayers: Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 117-118.

Jiang, Laizhu, Cui, Kun, Hainninen, Hannu, Effects of the composition, shape factor and area fraction of sulfide inclusions on the machinability of re-sulfurized free-machining steel: Journal of Materials Processing Technology, v. 58, no. 2-3 Mar 15 1996. p. 160-165.

Jinno, O., Tyagi, M.R., Kimura, Y., Influence of surface roughness on friction and scuffing behaviour of cast iron under sparse lubrication: Tribology International, v. 29, no. 2 Feb 1996. p. 129-136.

Jisheng, E., Stolarski, T.A., Gawne, D.T., Tribochemically assisted wear of silicon nitride ball: Journal of the European Ceramic Society, v. 16, no. 1 1996. p. 25-34.

John, S., Quinones, E.J., Ferguson, B., Pacheco, K., Mullins, C.B., Banerjee, S.K., Progression of the surface roughness of N** plus silicon epitaxial films a analyzed by AFM: Evolution of Epitaxial Structure and Morphology, Materials Research Society Symposium Proceedings, v. 399 1996, Pittsburgh, PA, p. 123-128.

Johnson, Joel T., Tsang, Leung, Shin, Robert T., Pak, K., Chan, Chi H., Ishimaru, Akira, Kuga, Yasuo, Backscattering enhancement of electromagnetic waves from two-dimensional perfectly conducting random rough surfaces—A comparison of Monte Carlo simulations with experimental data: IEEE Transactions on Antennas and Propagation, v. 44, no. 5 May 1996. p. 748-756.

Kaganer, V.M., Stepanov, S.A., Koehler, R., Effect of roughness correlations in multilayers on Bragg peaks in X- ray diffuse scattering: Physica B, Condensed Matter, v. 221, no. 1-4 Apr 2 1996. p. 34-43.

Kana, D.D., Fox, D.J., Hsiung, S.M., Interlock/friction model for dynamic shear response in natural jointed rock: International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts, v. 33, no. 4 Jun 1996. p. 371-386.

Kapp, David A., Brown, Gary S., New numerical method for rough-surface scattering calculations: IEEE Transactions on Antennas and Propagation, v. 44, no. 5 May 1996. p. 711-721.

Kardar, Mehran, Dynamic scaling phenomena in growth processes: Physica B, Condensed Matter, v. 221, no. 1-4 Apr 2 1996. p. 60-64.

Kashimura, Yukitatsu, Suzuki, Yoshiaki, Study on vibration control of boring tool and recognition of cutting state: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering, v. 62, no. 1 Jan 1996. p. 105-109.

Kashiwabara, Satoshi, Jyoko, Yukimi, Hayashi, Yasunori, Structure of electrodeposited platinum/cobalt multilayers: Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals, v. 60, no. 4 Apr 1996. p. 347-352.

Kato, Takahisa, Obara, Shingo, Improvement in dynamic characteristics of circular journal bearings by means of longitudinal microgrooves: Tribology Transactions, v. 39, no. 2 Apr 1996. p. 462-468.

Kato, Yozo, Takafuji, Shinzaburo, Kiriyama, Masaki, Effect of shot peening on fatigue strength of Ti-6Al-4V alloy at elevated temperatures: Zairyo/Journal of the Society of Materials Science, Japan, v. 45, no. 1 Jan 1996. p. 43-47.

Kavanagh, K.L., Morgan, B.A., Talin, A.A., Ring, K.M., Williams, R.S., Reuter, M.C., Tromp, R.M., BEEM and UHV-TEM studies of PtSi/Si(001): Silicide Thin Films - Fabrication, Properties and Applications, Materials Research Society Symposium Proceedings, v. 402 1996, Pittsburgh, PA, p. 461-473.

Kawamura, T., Multiple scattering calculation of RHEED from growth Si(001) surfaces: Surface Science, v. 351, no. 1-3 May 1 1996. p. 129-134.

Kazimirov, A., Zegenhagen, J., Denk, I., Maier, J., Smilgies, D.-M., Feidenhans, R., X-ray characterization of a SrTiO//3 bicrystal interface: Surface Science, v. 352-354 May 15 1996. p. 875-878.

Keller, Ulrich D.D.S., Hibst, Raimund, Experimental removal of subgingival calculus with the Er:YAG laser: Proceedings of SPIE - The International Society for Optical Engineering, v. 2623 1996. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, p. 189-198.

Kerans, Ronald J., Viability of oxide fiber coatings in ceramic composites for accommodation of misfit stresses: Journal of the American Ceramic Society, v. 79, no. 6 Jun 1996. p. 1664-1668.

Khulbe, K.C., Kruczek, B., Chowdhury, G., Gagne, S., Matsuura, T., Surface morphology of homogeneous and asymmetric membranes made from poly(phenylene oxide) by tapping mode atomic force microscope: Journal of Applied Polymer Science, v. 59, no. 7 Feb 14 1996. p. 1151-1158.

Kim, Jin-Hong, Shin, Sung-Chul, High coercivity in Co/Pt multilayers: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers, v. 35, no. 1B Jan 1996. p. 342-345.

Kim, Young Kwan, Sohn, Byoung Chung, Park, Ju Sang, Kim, Tae Wan, Park, Joon Soo, Kang, Dou-Youl, AFM studies on polyimide Langmuir-Blodgett films: Molecular Crystals and Liquid Crystals Science and Technology, Section A, Molecular Crystals and Liquid Crystals, v. 280 1996. p. 223-228.

Kind, Richard J., Serjak, Peter J., Abbott, Michael W.P., Measurements and prediction of the effects of surface roughness on profile losses and deviation in a turbine cascade: American Society of Mechanical Engineers (Paper) 1996. ASME, New York, 10pp 96-GT-203.

Kingston, J.J., Armani-Leplingard, F., Fork, D.K., Anderson, G.B., Green light generated by frequency-doubling in LiNbO//3 and LiTaO//3 thin films: Epitaxial Oxide Thin Films II, Materials Research Society Symposium Proceedings, v. 401 1996, Pittsburgh, PA, p. 243-248.

Klarstrom, Dwaine L., Heat treat cracking of superalloys: Advanced Materials & Processes, v. 149, no. 4 Apr 1996. p. 40EE-40HH.

Klemradt, U., Funke, M., Fromm, M., Lengeler, B., Peisl, J., Foerster, A., Growth-induced interface roughness of GaAs/AlAs-layers studied by X- ray scattering under grazing angles: Physica B, Condensed Matter, v. 221, no. 1-4 Apr 2 1996. p. 27-33.

Klocke, Fritz, Hegener, Guido, Deacu, Liviu, Hochleistungs-Aussenrund-Formschleifen High-performance cylindrical surface form grinding: Zeitschrift für Wirtschaftlichen Fabrikbetrieb, v. 91, no. 4 Apr 1996. p. 164-167.

Kobayashi, Kazuyuki, Adachi, Sadao, Takizawa, Hidekazu, NH//4OH-treated Si(111) surfaces studied by spectroscopic ellipsometry and atomic force microscopy: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers, v. 35, no. 2A Feb 1996. p. 515-519.

Kobayashi, Ryoji, Fukunishi, Yu, Tsuda, Masaaki, Abe, Akira, Experimental analysis of striated roughness on the surface of metallic materials in abrasive jet cutting: Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B, v. 62, no. 595 Mar 1996. p. 946-951.

Koerkamp, M. Groot, Rasing, Theo, Giant nonlinear Kerr effects: Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 213-214.

Koester, Robert J., Fractal community tissue—Differentiating the energy harvest through self-similar urban form: Renewable Energy, v. 8, no. 1-4 pt 1 May-Aug 1996. p. 160-164.

Koga, Junji, Takagi, Shin-ichi, Tariumi, Akira, Observation of oxide-thickness-dependent interface roughness in Si MOS structure: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers, v. 35, no. 2B Feb 1996. p. 1440-1444.

Kok, K.Y., Hall, M.J., Leake, J.A., Microstructural characterisation of Co/Cu multilayers using X-ray diffraction: Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 51-52.

Kolics, A., Horanyi, G., Some considerations about the applicability of the in situ radiotracer 'foil' method for the study of accumulation processes on compact stainless steel electrodes - I. measurement of beta -radiation: Electrochimica Acta, v. 41, no. 6 Apr 1996. p. 791-802.

Komeda, T., Morita, Y., Tokumoto, H., Surface roughening and metastable superstructures on wet-processed Si(111) surface induced by hydrogen desorption: Surface Science, v. 348, no. 1-2 Mar 1 1996. p. 153-160.

Komeda, Tadahiro, Gwo, S., Tokumoto, Hiroshi, MOS interface characterization by cross-sectional STM: Surface Science, v. 357-358, no. 1-3 Jun 20 1996. p. 38-41.

Komori, K., Analysis of herring-bone mechanism in sheet rolling: Journal of Materials Processing Technology, v. 60, no. 1-4 Jun 15 1996. p. 377-380.

Kortright, J.B., Status and limitations of multilayer x-ray interference structures: Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 271-275.

Koski, Kari, Holsa, Jorma, Ernoult, Jacques, Rouzaud, Andre, Connection between sputter cleaning and adhesion of thin solid films: Surface & Coatings Technology, v. 80, no. 1-2 Mar 1996. p. 195-199.

Kuba, Kanji, Sugihara, Tadashi, Selection of kinetic energy of laser ablated particles: Applied Surface Science, v. 96-98 Apr 2 1996. p. 659-662.

Kuech, T.F., Nayak, S., Huang, J.-W., Li, J., Chemical and physical effects in oxygen incorporation during the metallorganic vapor phase epitaxial growth of GaAs: Journal of Crystal Growth, v. 163, no. 1-2 May 2 1996. p. 171-179.

Kuga, Y., Phu, P., Experimental studies of millimeter-wave scattering in discrete random media and from rough surfaces - summary: Journal of Electromagnetic Waves and Applications, v. 10, no. 3 1996. p. 451-453.

Kuga, Yasuo, Zhao, Hui, Experimental studies on the phase distribution of two copolarized signals scattered from two-dimensional rough surfaces: IEEE Transactions on Geoscience and Remote Sensing, v. 34, no. 2 Mar 1996. p. 601-603.

Kumai, S., Hu, J., Higo, Y., Nunomura, S., Effects of dendrite cell size and particle distribution on the near- threshold fatigue crack growth behaviour of cast Al-SiCp composites: Acta Materialia, v. 44, no. 6 June 1996. p. 2249-2257.

Kuntze, J., Huck, M., Rauch, T., Boemermann, J., Speller, S., Heiland, W., Pt(110) surface studied by STM and RHEED: Surface Science, v. 355, no. 1-3 Jun 1 1996. p. L300-L304.

Kunz, R.R., Clark, H.R., Nitishin, P.M., Rothschild, M., Ahern, B.S., High resolution studies of crystalline damage induced by lapping and single-point diamond machining of Si(100): Journal of Materials Research, v. 11, no. 5 May 1996. p. 1228-1237.

Kurobe, Toshiji, Noguchi, Michikazu, Matsumoto, Takahiro, Precision breaking of a silicon wafer by YAG laser - double irradiation breaking assisted by mirror surface cooling: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering, v. 62, no. 1 Jan 1996. p. 95-99 .

Kyung, J.H., Lawandy, N.M., UV light induced selective etching in borosilicate glasses for micropatterning: Electronics Letters, v. 32, no. 5 Feb 29 1996. p. 451-452.

# 1996 L-P

Laidler, H., Hickey, B.J., Hase, T.P.A., Tanner, B.K., Schad, R., Bruynseraede, Y., Effect of annealing on the roughness and GMR of Fe/Cr multilayers: Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 332-334.

Laidler, H., Pape, I., Gregory, C.I., Hickey, B.J., Tanner, B.K., X-ray and magnetoresistance measurements of annealed Co/Cu multilayers: Journal of Magnetism and Magnetic Materials, v. 154, no. 2 1996. p. 165-174.

LaMadrid, M.A., O'Connor, S.D., Peker, A., Johnson, W.L., Baldeschwieler, J.D., Surface microstructure of Zr//4//1//.//2//5Ti//1//3//. //7//5Cu//1//2//. //5Ni//1//0//. //0Be//2////.//5, a bulk metallic glass: Journal of Materials Research, v. 11, no. 6 Jun 1996. p. 1494-1499.

Landry, K., Kalogeropoulou, S., Eustathopoulos, N., Naidich, Y., Krasovsky, V., Characteristic contact angles in the aluminum/vitreous carbon system: Scripta Materialia, v. 34, no. 6 Mar 15 1996. p. 841-846.

Lang, P., Nordstroem, L., Wilderberger, K., Zeller, R., Dederichs, P.H., Ab-initio calculations of the interlayer exchange coupling in Co/Cu: Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 229-230.

Lange, D.A., Ouyang, C., Shah, S.P., Behavior of cement based matrices reinforced by randomly dispersed microfibers: Advanced Cement Based Materials, v. 3, no. 1 Jan 1996. p. 20-30.

Larralde, H., Al-Falou, A.A., Ball, R.C., Stability analysis of cracks propagating in three dimensional solids: Symposium Q, Fracture-Instability Dynamics, Scaling, and Ductile/Brittle Behavior, Materials Research Society Symposium Proceedings, v. 409 1996, Pittsburgh, PA, p. 321-326.

Lee, C.-H., Chang, J.-L., Hsu, K.-T., Investigation of hydraulic aperture at surface-exposed rock fractures in situ: Geotechnique, v. 46, no. 2 Jun 1996. p. 343-349.

Lee, Chih-Hao, Tseng, Sung-Yuh, In situ x-ray reflectivity measurement of thin film growth during vacuum deposition: Applied Surface Science, v. 92, no. 1-4 Feb 2 1996. p. 282-286.

Lee, Ching-Ting, Yeh, Jih-Hsien, Lyu, Yeh-Tang, Characterization of Nd-doped AlGaAs grown by liquid phase epitaxy: Journal of Crystal Growth, v. 163, no. 4 Jun 2 1996. p. 343-347.

Lee, J.W., Hong, J., Lambers, E.S., Abernathy, C.R., Pearton, S.J., Hobson, W.S., Ren, F., Cl//2-based dry etching of GaAs, AlGaAs, and GaP: Journal of the Electrochemical Society, v. 143, no. 6 Jun 1996. p. 2010-2014.

Lee, Jaesoo, Paynter, Gerald C., Modified Spalart-Allmaras one-equation turbulence model for rough wall boundary layers: Journal of Propulsion and Power, v. 12, no. 4 Jul-Aug 1996. p. 809-812.

Lee, S.S.G., Loh, N.H., Computer-integrated ball burnishing of a plastic-injection-mould cavity insert: Journal of Materials Processing Technology, v. 57, no. 1-2 Feb 1 1996. p. 189-194.

Lee, Si C., Ren, Ning, Behavior of elastic-plastic rough surface contacts as affected by surface topography, load, and material hardness: Tribology Transactions, v. 39, no. 1 Jan 1996. p. 67-74.

Lewis, Patricia A., Theory for the diffraction of SH waves by randomly rough surfaces in two dimensions: Quarterly Journal of Mechanics and Applied Mathematics, v. 49, no. pt 2 May 1996. p. 261-286.

Li, L., Tsong, I.S.T., Atomic structures of 6H-SiC (0001) and (0001 over bar) surfaces: Surface Science, v. 351, no. 1-3 May 1 1996. p. 141-148.

Li, Zhi-Jian, Fung, Adrian K., Tjuatja, Saibun, Gibbs, Daniel P., Betty, Christopher L., Irons, James R., Modeling study of backscattering from soil surfaces: IEEE Transactions on Geoscience and Remote Sensing, v. 34, no. 1 Jan 1996. p. 264-271.

Line, A., Masbernat, L., Soualmia, A., Interfacial interactions and secondary flows in stratified two-phase flow: Chemical Engineering Communications, v. 141-142 1996. p. 303-329.

Liou, Tong-Miin, Shuy, Woei-Jiunn, Tsao, Yu-Houe, Effect of rib height and pitch on the thermal performance of a passage disturbed by detached solid ribs: American Society of Mechanical Engineers (Paper) 1996. ASME, New York, 11pp 96-GT-490.

Liu, Dean-Mo, Fu, Chen-Tsu, Lin, Li-Jiaun, Influence of machining on the strength of SiC-Al//2O//3-Y//2O//3 ceramic: Ceramics International, v. 22, no. 3 1996. p. 267-270.

Liu, Haiyan, Hsu, Stephen M., Modeling of microfracture-induced wear and wear transition in sliding of polycrystalline alumina ceramics: Wear, v. 195, no. 1-2 Jul 1996. p. 169-177.

Liu, K., Liu, X.J., Xie, Y.B., Definition of the transition from fluid lubrication to mixed lubrication for rough surface: Lubrication Science, v. 8, no. 3 Apr 1996. p. 287-295.

Ljungdahl, Gosta, Lovesey, Stephen W., Surface scattering near grazing angles—The distorted wave born approximation for rough surfaces: Physica Scripta, v. 53, no. 6 Jun 1996. p. 734-748.

Lonardo, P.M., Trumpold, H., and De Chiffre, L., Progress in 3D surface microtopography characterization: CIRP Annals, v. 45, no. 2, 1996, p. 589-598.

Lopes, M.C.V., dos Santos, S.G., Hasenack, C.M., Baranauskas, V., Si-SiO//2 electronic interface roughness as a consequence of Si-SiO//2 topographic interface roughness: Journal of the Electrochemical Society, v. 143, no. 3 Mar 1996. p. 1021-1025.

Lu, H.C., Gusev, E.P., Garfunkel, E., Gustafsson, T., Ion scattering study of the interaction of oxygen with Si(111)—Surface roughening and oxide growth: Surface Science, v. 351, no. 1-3 May 1 1996. p. 111-128.

Lu, X., Jiang, Z., Huang, D., Zhu, H., Zhang, X., Wang, X., Crystalline quality of Si epilayers influenced by Sb doping: Journal of Crystal Growth, v. 158, no. 1-2 Jan 1 1996. p. 169-173.

Lulli, A., Zanetta, P., Lucia, A.C., Casagrande, F., Contrast variations in white-light speckle interferometry with application to 3D profilometry: Optics Communications, v. 124, no. 5-6 Mar 15 1996. p. 550-557.

Luo, Zong-Ping, Niebur, Glen L., An, Kai-Nan, Determination of the proximity tolerance for measurement of surface contact areas using a magnetic tracking device: Journal of Biomechanics, v. 29, no. 3 Mar 1996. p. 367-372.

Machuron-Mandard, Xavier, Madic, Charles, Plutonium dioxide particle properties as a function of calcination temperature: Journal of Alloys and Compounds, v. 235, no. 2 Mar 15 1996. p. 216-224.

Maeyama, S., Sugiyama, M., Oshima, M., Surface structures of (NH//4)//2S//x-treated GaAs studied by S K-edge x-ray absorption fine structure: Surface Science, v. 357-358, no. 1-3 Jun 20 1996. p. 527-531.

Mainsah, Evaristus, Dong, W.P., and Stout, K.J., Three-dimensional imaging of engineering surfaces, *in* Descour, M.R., Harding, K.G., and Svetkoff, D.J., eds., Three-Dimensional and Unconventional Imaging for Industrial Inspection and Metrology: International Society for Optical Engineering (SPIE), Proceedings, v. 2599, p. 141-154, (1996).

Maniks, J., Simanovskis, A., Surface force-induced bonding at metal multiasperity contacts: Journal of Adhesion Science and Technology, v. 10, no. 6 1996. p. 541-557.

Mao, K., Sun, Y., Bell, T., Numerical model for the dry sliding contact of layered elastic bodies with rough surfaces: Tribology Transactions, v. 39, no. 2 Apr 1996. p. 416-424.

Marciniak, Mieczyslaw, Non-conventional grinding as a tribological system: Abrasives Jun-Jul 1996. 5pp.

Marks, T.J., Belot, J.A., Hinds, B.J., Chen, J., Studebaker, D., Lei, J., Chang, R.P.H., Schindler, J.L., Kannewurf, C.R., MOCVD routes to thin films for superconducting applications. Precursor synthesis and film processing issues: Metal-Organic Chemical Vapor Deposition of Electronic Ceramics II, Materials Research Society Symposium Proceedings, v. 415 1996, Pittsburgh, PA, p. 67-78.

Marui, E., Endo, H., Hashimoto, M., Kato, Sh., Some considerations of slideway friction characteristics by observing stick-slip vibration: Tribology International, v. 29, no. 3 May 1996. p. 251-262.

Masad, Jamal A., Abid, Ridha, Effect of laminar flow control by suction on separation: Journal of Fluids Engineering, Transactions of the ASME, v. 118, no. 2 Jun 1996. p. 410-412.

Masad, Jamal A., Boundary-layer tripping by a roughness element: Journal of Propulsion and Power, v. 12, no. 4 Jul-Aug 1996. p. 812-814.

Masu, Kazuya, Matsuhashi, Hideki, Gotoh, Akio, Chung, Ju-Hyuck, Yokoyama, Michio, Tajima, Ryo, Fujita, Yasuhito, Tsubouchi, Kazuo, Multilevel metallization based on Al CVD: Digest of Technical Papers - Symposium on VLSI Technology 1996. IEEE, Piscataway, NJ, USA,96CH35944. p. 44-45.

Matsumoto, Yuji, Okawa, Yuji, Fujita, Takaya, Tanaka, Ken-ichi, STM studies of a catalytically active p(3 multiplied by 1)Pt-Rh(100) alloy surface: Surface Science, v. 355, no. 1-3 Jun 1 1996. p. 109-114.

Matsumoto, Yuji, Tanaka, Ken-ichi, Reversible reaction forming (-Cu-O-) strings and (Cu)//6-clusters on Ag(110) shown by STM: Surface Science, v. 350, no. 1-3 Apr 20 1996. p. L227-L231.

Matsuo, N., Fujiwara, H., Miyoshi, T., Koyanagi, T., Numerical analysis for conduction mechanism of thin oxide-nitride-oxide films formed on rough poly-Si: IEEE Electron Device Letters, v. 17, no. 2 Feb 1996. p. 56-58.

Matsuoka, Hironori, Ono, Hajime, Katsuki, Akira, Tsuda, Yoshihiro, Influence of viscosity of base oil on effect of additive in cutting oil for hobbing (2nd report, synergism of EP additive and rape-seed oil): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C, v. 62, no. 593 Jan 1996. p. 359-366.

Matsuoka, Hironori, Sakai, Tadao, Katsuki, Akira, Tsuda, Yoshihiro, Effects of properties of base oil for cutting oil on wear of hard cutting tool and finished surface roughness generated in turning: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C, v. 62, no. 593 Jan 1996. p. 367-374.

Mattox, D.M., Surface effects on the growth, adhesion and properties of reactively deposited hard coatings: Surface & Coatings Technology, v. 81, no. 1 May 1996. p. 8-16.

May, Richard W.P., Ackers, John C., Butler, David, John, Sian, Development of design methodology for self-cleansing sewers: Water Science and Technology, v. 33, no. 9 1996. p. 195-205.

Mazzeo, Giorgio, Carlon, Enrico, Beijeren, Henk van, Surface phase transitions in two-component systems: Surface Science, v. 352-354 May 15 1996. p. 960-963.

Mbise, G.W., Niklasson, G.A., Granqvist, C.G., Scaling of surface roughness in evaporated calcium fluoride films: Solid State Communications, v. 97, no. 11 Mar 1996. p. 965-969.

McDonald, Richard A., Bar code labels in harsh environments: Nepcon West - February 1996 National Electronic Packaging and Production Conference-Proceedings of the Technical Program, v. 3 1996. p. 1653-1662.

McNairn, H., Boisvert, J.B., Major, D.J., Gwyn, Q.H.J., Brown, R.J., Smith, A.M., Identification of agricultural tillage practices from C-band radar backscatter: Canadian Journal of Remote Sensing, v. 22, no. 2 Jun 1996. p. 154-162.

Mechaber, W.L., Marshall, D.B., Mechaber, R.A., Jobe, R.T., and Chew, F.S., Mapping leaf surface landscapes: Proceedings of the National Acacdemy of Sciences of the USA, v. 93, no. 10 (May), p. 4600-4603, (1996).

Mellali, M., Fauchais, P., Grimaud, A., Influence of substrate roughness and temperature on the adhesion/cohesion of alumina coatings: Surface & Coatings Technology, v. 81, no. 2-3 Jun 1996. p. 275-286.

Messoussi, Rochdi, Verhaverbeke, Steven, Yabune, Tatsuhiro, Nose, Masashi, Ohmi, Tadahiro, Improvement of rinsing efficiency after sulfuric acid hydrogen peroxide mixture (H//2SO//4/H//2O//2) by HF addition: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers, v. 35, no. 4A Apr 1996. p. 1989-1992.

Michely, Thomas, Hohage, Michael, Esch, Stefanie, Comsa, George, Effect of surface reconstruction on the growth mode in homoepitaxy: Surface Science, v. 349, no. 1 Mar 20 1996. p. L89-L94.

Miller, M., Lakes, R.S., Conner, S., Optical testing of hard disks: Optics and Laser Technology, v. 28, no. 3 Apr 1996. p. 151-156.

Min, Yoo Hong, Lee, Kwang-Sup, Yoon, Choon Sup, Kim, Kyoung-Soo, Moon, Ki-Jeong, Shim, Hong-Ku, Sol-gel processed NLO silica materials containing organic salt dye: Molecular Crystals and Liquid Crystals Science and Technology Section B, Nonlinear Optics, v. 15, no. 1-4 1996. p. 175-179.

Minoda, H., Tanishiro, Y., Yamamoto, N., Yagi, K., In situ TEM observations of surfactant-mediated epitaxy—Growth of Ge on an Si(111) surface mediated by In: Surface Science, v. 357-358, no. 1-3 Jun 20 1996. p. 418-421.

Missana, T., Afonso, C.N., Microstructure and roughness improvement of polycrystalline Bi thin films upon pulsed-laser melting: Applied Physics A, Materials Science & Processing, v. 62, no. 6 June 1996. p. 513-518.

Miura, Yoshiki, Takahashi, Naoyuki, Koukitu, Akinori, Seki, Hisashi, GaAs grown by metallorganic-hydrogen chloride vapor-phase epitaxy: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers, v. 35, no. 2A Feb 1996. p. 546-550.

Miyake, Koji, Ishida, Masahiko, Uchikawa, Michihiro, Hata, Kenj, Shigekawa, Hidemi, Nannichi, Yasuo, Yoshizaki, Ryozo, Quenched Si(111)-DAS (dimer-adatom-stacking fault) structures studied by scanning tunneling microscopy: Surface Science, v. 357-358, no. 1-3 Jun 20 1996. p. 464-467.

Miyazima, Sasuke, Matsuura, Shu, Morphology of the fungus aspergillus oryzae and nidulans: Disordered Materials and Interfaces, Materials Research Society Symposium Proceedings, v. 407 1996, Pittsburgh, PA, p. 301-306.

Mizutani, Hideyuki, Yamane, Shuji, Nakashima, Mamoru, Okamura, Kenjiro, In-feed internal honing of fine ceramics (Honing processes of various fine ceramics): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C, v. 62, no. 594 Feb 1996. p. 761-766.

Molaei, Masoud, Effect of cold work and heat treating on the formation of brittle alloy layer during hot dipped galvanizing: Wire Journal International, v. 29, no. 3 Mar 1996. p. 72-76.

Molino, L.N., Timmie Topoleski, L.D., Effect of BaSO//4 on the fatigue crack propagation rate of PMMA bone cement: Journal of Biomedical Materials Research, v. 31, no. 1 May 1996. p. 131-137.

Monaghan, J., O'Reilly, M., Influence of lubrication on the surface finish of cold forged components: Journal of Materials Processing Technology, v. 56, no. 1-4 Jan 1996. p. 678-690.

Moore, D.F., A note on the mathematical representation of surface roughness: Wear, 9, 6, p. 477-9. (November/December, 1996).

Mou, C.-Y., and Hsu, J.W.P., Scaling of surface roughness in a heterogeneous film growth system—GexSi1-x on Si: Physical Review B, v. 53, no. 12, p. R7610-7613, (1996).

Mroz, Z., Giambanco, G., Interface model for analysis of deformation behaviour of discontinuities: International Journal for Numerical and Analytical Methods in Geomechanics, v. 20, no. 1 Jan 1996. p. 1-33.

Murakami, Y., Tsutsumi, K., Fujishima, M., Quantitative evaluation of effect of surface roughness on fatigue strength: Nippon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan Society of Mechanical Engineers, Part A, v. 62, no. 597 May 1996. p. 1124-1131.

Nagai, Niroh, Nishio, Shigefumi, Leidenfrost temperature on an extremely smooth surface: Experimental Thermal and Fluid Science, v. 12, no. 3 Apr 1996. p. 373-379.

Nagato, Yasushi, Higashitani, Seiji, Yamada, Kotaro, Nagai, Katsuhiko, Theory of rough surface effects on the anisotropic BCS states: Journal of Low Temperature Physics, v. 103, no. 1-2 Apr 1996. p. 1-22.

Nakada, Masafumi, Ohshima, Norikazu, Okada, Mitsuya, Crystal orientation and surface roughness of Bi films prepared in ionized cluster beam apparatus: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers, v. 35, no. 2A Feb 1996. p. 714-719.

Nakae, Masahiko, Hidaka, Kazunori, Ariura, Yasutsune, Gear finishing with a nylon lap (A lapping machine and lapped surfaces): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C, v. 62, no. 594 Feb 1996. p. 735-740.

Nakae, Masahiko, Hidaka, Kazunori, Ariura, Yasutsune, Fundamental research on CBN finishing hob (3rd report, improvement of the surface roughness by using cutting fluid): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C, v. 62, no. 594 Feb 1996. p. 741-747.

Nakamura, Akinobu, Mitsui, Kimiyuki, Goto, Takayuki, Development of dual servo STM: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering, v. 62, no. 6 Jun 1996. p. 850-854.

Nakata, Hitoshi, Ayata, Kenzo, Morishita, Masafumi, Kokita, Masahiko, Fukumoto, Hirohiko, Electromagnetic casting of steel with high frequency alternating magnetic fields: R&D Research and Development, v. 46, no. 1 May 1996. p. 30-33.

Nakatani, S., Kuwahara, Y., Takahashi, T., Aono, M., Structure determination of Si(111) root 3 multiplied by root 3 minus Sb surface by X-ray diffraction: Surface Science, v. 357-358, no. 1-3 Jun 20 1996. p. 65-68.

Nashashibi, Adib, Ulaby, Fawwaz T., Sarabandi, Kamal, Measurement and modeling of the millimeter-wave backscatter response of soil surfaces: IEEE Transactions on Geoscience and Remote Sensing, v. 34, no. 2 Mar 1996, p. 561-572.

Ni, X., Cheng, H.S., Seizure resistance of aluminum-lead-silicon connecting rod bearings and nodular cast iron shafts: Tribology Transactions, v. 39, no. 1 Jan 1996. p. 121-129.

Niem, P.I.F., Lau, T.L., Kwan, K.M., Effect of surface characteristics of polymeric materials on the strength of bonded joints: Journal of Adhesion Science and Technology, v. 10, no. 4 1996. p. 361-372.

Nishioka, Takao, Tanaka, Yoshio, Yamakawa, Akira, Miyake, Masaya, Mechanism of mirror-finish grinding of silicon nitride ceramics: Nippon Seramikkusu Kyokai Gakujutsu Ronbunshi/Journal of the Ceramic Society of Japan, v. 104, no. 1205 Jan 1996. p. 33-37.

O'Connor, D.J., Draeger, M., Molenbroek, A.M., Shen, Y.G., Formation of Ni(100)-Al surface alloy: Surface Science, v. 357-358, no. 1-3 Jun 20 1996. p. 202-207.

O'hara, Peter. Surface optimisation by engineering the stress and roughness: American Society of Mechanical Engineers (Paper) 1996. ASME, New York, 6pp 96-GT-451.

O'Neill, Kevin, Lussky, Robert F., Paulsen, Keith D., Scattering from a metallic object embedded near the randomly rough surface of a lossy dielectric: IEEE Transactions on Geoscience and Remote Sensing, v. 34, no. 2 Mar 1996. p. 367-376.

Obernosterer, F., Oehme, W.F., Pulse noise in thin film disk recording systems: Journal of Magnetism and Magnetic Materials, v. 155, no. 1-3 Mar 2 1996. p. 338-340.

Oda, Katsuya, Kiyota, Yukihiro, H//2 cleaning of silicon wafers before low-temperature epitaxial growth by ultrahigh vacuum/chemical vapor deposition: Journal of the Electrochemical Society, v. 143, no. 7 Jul 1996. p. 2361-2364.

Oguri, E., Kohama, Y., Drag reduction by micron-sized distributed surface geometry on a flat plate: Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B, v. 62, no. 597 May 1996. p. 1754-1761.

Oh, K.J., Lim, C.S., Kim, Dalwoo, Development of on-line measurement system of surface roughness for cold-rolled steel sheet: Conference Record - IEEE Instrumentation and Measurement Technology Conference, v. 1 1996. IEEE, Piscataway, NJ, USA,96CB35936. p. 335-337.

Ohashi, Osamu, Meguro, Susumu, Effect of argon ion bombardment on diffusion bonding joints of Cu or Ti: Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals, v. 60, no. 3 Mar 1996. p. 324-330.

Ohlsson, Robert, A topographic study of functional surfaces: Göteborg, Sweden, Department of Production Engineering, Chalmers University of Technology, unpublished Ph.D. thesis, 1996, paging unknown.

Onchi, Yoshiaki, Matsumori, Noboru, Ikawa, Naoya, Shimada, Shoichi, Cutting mechanism of superfinishing by fine CBN stone: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering, v. 62, no. 5 May 1996. p. 666-670.

Osada, Tasuku, Ohuchi, Hidetoshi, Kasai, Toshio, Monitoring of lapping process with piezoelectric ceramic sensor (1st report) - relation between lapping conditions and detected acoustic signals: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering, v. 62, no. 6 Jun 1996. p. 881-885.

Ozkan, Cengiz S., Nix, William D., Gao, Huajian, Strain relaxation in heteroepitaxial Si//1// minus //xGe//x films via surface roughening processes: Evolution of Epitaxial Structure and Morphology, Materials Research Society Symposium Proceedings, v. 399 1996, Pittsburgh, PA, p. 407-412.

Paniago, R., Homma, H., Chow, P.C., Reichert, H., Moss, S.C., Barnea, Z., Parkin, S.S.P., Cookson, D., Interfacial roughness of partially correlated metallic multilayers studied by non-specular X-ray reflectivity: Physica B, Condensed Matter, v. 221, no. 1-4 Apr 2 1996. p. 10-12.

Pape, I., Hase, T.P.A., Tanner, B.K., Laidler, H., Emmerson, C., Shen, T., Hickey, B.J., Giant magnetoresistance and interface structure of Cu/Co multilayers grown by MBE on Si (111) substrates with copper-silicide buffers: Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 373-374.

Park, Young-Bae, Rhee, Shi-Woo, Effect of hydrogen plasma precleaning on the removal of interfacial amorphous layer in the chemical vapor deposition of microcrystalline silicon films on silicon oxide surface: Applied Physics Letters, v. 68, no. 16 Apr 15 1996. p. 2219-2221.

Paroubek, Jan, Cyrus, Vaclav, Kyncl, Jiri, Influence of outlet stator part surface roughness on the performance of a very low flow coefficient centrifugal compressor stage: American Society of Mechanical Engineers (Paper) 1996. ASME, New York, 11pp 96-GT-179.

Patching, M.J., Evans, H.P., Snidle, R.W., Micro-EHL analysis of ground and superfinished steel discs used to simulate gear tooth contacts: Tribology Transactions, v. 39, no. 3 Jul 1996. p. 595-602.

Pawelski, Hartmut, Applicability of fractal concepts to surface roughness: Steel Research, v. 67, no. 4 Apr 1996. p. 144-148.

Pawlus, P., Study of the dependence of the functional properties of the cylinder liner surface layer on the operating conditions: Proceedings of the Institution of Mechanical Engineers, Part J, Journal of Engineering Tribology, v. 210, no. 1 1996. p. 17-27.

Pearton, S.J., Lee, J.W., Lambers, E.S., Abernathy, C.R., Ren, F., Hobson, W.S., Shul, R.J., Comparison of dry etching techniques for III-V semiconductors in CH//4/H//2/Ar plasmas: Journal of the Electrochemical Society, v. 143, no. 2 Feb 1996. p. 752-758.

Pecorari, Claudio, Andrew, G., Briggs, D., Acoustic microscopy and dispersion of leaky Rayleigh waves on randomly rough surfaces—A theoretical study: IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, v. 43, no. 3 May 1996. p. 428-433.

Pelfrey, Philip C., P&W cryogenic fluid-film bearing and seal technology development and implementation: NASA Conference Publication, no. 10181 1996. NASA, Cleveland, OH, p. 223-235.

Perovic, D.D., Bahierathan, B., Houghton, D.C., Lafontaine, H., Baribeau, J.-M., Strain relaxation at low misfits—Dislocation injection vs. surface roughening: Evolution of Epitaxial Structure and Morphology, Materials Research Society Symposium Proceedings, v. 399 1996, Pittsburgh, PA, p. 325-336.

Perron, E., Louchez, P.R., Laforte, J.L., Introductory analysis of boundary-layer development on de/anti-icing fluid: Journal of Aircraft, v. 33, no. 1 Jan-Feb 1996. p. 74-80.

Pesenti, F., Hassler, J.C., Lepoutre, P., Influence of pigment morphology on microstructure and gloss of model coatings: International Paper and Coating Chemistry Symposium, Proceedings 1996. TAPPI Press, Norcross, GA, p. 141-144.

Peters, Wayne D., Cogswell, Steven R., Venart, James E.S., Dense gas simulation flows over rough surfaces: Journal of Hazardous Materials, v. 46, no. 2-3 Apr 1996. p. 215-223.

Phirke, P.S., Bhole, N.G., Adhaoo, S.H., Response surface modelling and optimization for dehulling of pigeonpea with different pretreatments and conditions: Journal of Food Science and Technology, v. 33, no. 1 Jan-Feb 1996. p. 47-52.

Piggott, M.R., Liu, K., Production processing - mechanical property links via mesostructures—Tensioning the fibres in pultrusions: International SAMPE Symposium and Exhibition (Proceedings), v. 41, no. 1 1996. p. 159-170.

Pilarczyk, Jan W., Hydrodynamic drawing effects on wire ASTRO characteristics: Proceedings of the Annual Convention of the Wire Association International 1996. Wire Assoc Int Inc, Guilford, CT, p. 69-77.

Pindoria, Govind, Kawaguchi, Kenichi, Wang, Furen, Nishiyama, Madoka, Morishita, Tadataka, Study of the surface and structural changes of YBa//2Cu//3O//7// minus // delta thin films induced by low energy O** plus ions: Japanese Journal of Applied Physics, Part 2, Letters, v. 35, no. 2A Feb 1 1996. p. L136-L139.

Plaut, Z., Carmi, A., Grava, A., Cotton root and shoot responses to subsurface drip irrigation and partial wetting of the upper soil profile: Irrigation Science, v. 16, no. 3 Feb 1996. p. 107-113.

Podczeck, F., Newton, J.M., James, M.B., Adhesion force of micronized Salmeterol Xinafoate particles to pharmaceutically relevant surface materials: Journal of Physics D, Applied Physics, v. 29, no. 7 Jul 14 1996. p. 1878-1884.

Podczeck, Fridrun, Newton, J. Michael, James, Michael B., Influence of physical properties of the materials in contact on the adhesion strength of particles of salmeterol base and salmeterol salts to various substrate materials: Journal of Adhesion Science and Technology, v. 10, no. 3 1996. p. 257-268.

Polubotko, A.M., Hatta, A., Suzuki, Y., Common character of the phenomena accompanying SERS and the infrared absorption enhancement: Infrared Physics & Technology, v. 37, no. 4 Jun 1996. p. 479-482.

Polubotko, A.M., Manifestation of electrodynamical forbiddance of the quadrupole SERS mechanism in the methane molecule: Optics Communications, v. 127, no. 1-3 Jun 1 1996. p. 135-143.

Pouliquen, Olivier, Renaut, Nathalie, Onset of granular flows on an inclined rough surface—Dilatancy effects: Journal De Physique, II, v. 6, no. 6 Jun 1996. p. 923-935.

Press, W., Tolan, M., Stettner, J., Seeck, O.H., Schlomka, J.P., Nitz, V., Schwalowsky, L., Mueller-Buschbaum, P., Bahr, D., Roughness of surfaces and interfaces: Physica B, Condensed Matter, v. 221, no. 1-4 Apr 2 1996. p. 1-9.

Provder, Theodore, Kunz, Barbara, Application of profilometry and fractal analysis to the characterization of coatings surface roughness: Progress in Organic Coatings, v. 27, no. 1-4 Jan-Apr 1996. p. 219-226.

# 1996 Q-S

Rafla-Yuan, H., Mathew, J.G.H., Hichwa, B.P., Characterization of proton-induced color transition in an amorphous tungsten oxide film: Journal of the Electrochemical Society, v. 143, no. 7 Jul 1996. p. 2341-2346.

Raisanen, V.I., Alava, M.J., Nieminen, R.M., Fracture surfaces in 3D fuse networks: Symposium Q, Fracture-Instability Dynamics, Scaling, and Ductile/Brittle Behavior, Materials Research Society Symposium Proceedings, v. 409 1996, Pittsburgh, PA, p. 377-382.

Rakels, Jan H., Influence of the surface height distribution on the total integrated scatter (TIS) formula: Nanotechnology, v. 7, no. 1 Mar 1996. p. 43-46.

Ramanujam, P.S., Holme, N.C.R., Hvilsted, S., Atomic force and optical near-field microscopic investigations of polarization holographic gratings in a liquid crystalline azobenzene side-chain polyester: Applied Physics Letters, v. 68, no. 10 Mar 4 1996. p. 1329-1331.

Ramesh, S., Ramamoorthy, B., Measurement of surface finish using an optical diffraction technique: Wear, v. 195, no. 1-2 Jul 1996. p. 148-151.

Rappich, J., Lewerenz, H.J., Photo- and potential-controlled nanoporous silicon formation on n- Si(111)—An in-situ FTIR investigation: Thin Solid Films, v. 276, no. 1-2 Apr 15 1996. p. 25-28.

Rasmusson, J.R., Broms, P., Birgerson, J., Erlandsson, R., Salaneck, W.R., Interface surfaces of a CN-substituted poly(phenylenevinylene) light- emitting diode, a morphological study: Synthetic Metals, v. 79, no. 1 Apr 30 1996. p. 75-84.

Rau, G., Cakan, M., Moeller, D., Arts, T., Effect of periodic ribs on the local aerodynamic and heat transfer performance of a straight cooling channel: American Society of Mechanical Engineers (Paper) 1996. ASME, New York, 9pp 96-GT-541.

Ravigururajan, T.S., Bergles, A.E., Optimization of in-tube enhancement for large evaporators and condensers: Energy (Oxford), v. 21, no. 5 May 1996. p. 421-432.

Razafitrimo, H., Gao, Y., Feld, W.A., Hsieh, B.R., Layer-wise topographic study of a polymeric light-emitting diode—Indium-tin oxide/poly(2,3-diphenyl-p-phenylene vinylene)/Ag: Synthetic Metals, v. 79, no. 2 May 15 1996. p. 103-106.

Rebollo, M.A., Hogert, E.N., Albano, J., Raffo, C.A., Gaggioli, N.G., Correlation between roughness and porosity in rocks: Optics and Laser Technology, v. 28, no. 1 Feb 1996. p. 21-23.

Rebollo, M.A., Perez Quintian, F., Hogert, Elsa N., Landau, Monica R., Gaggioli, Nestor G., Anomalous behavior of the coherent light diffusion by a tilted translucent rough surface, part I: Proceedings of SPIE - The International Society for Optical Engineering, v. 2730 1996. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, p. 211-216.

Rebollo, M.A., Perez Quintian, F., Landau, Monica R., Hogert, Elsa N., Gaggioli, Nestor G., Relation between the diffusion curve and the roughness of a tilting diffuser, part II: Proceedings of SPIE - The International Society for Optical Engineering, v. 2730 1996. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, p. 294-300.

Remington, P., Webb, J., Estimation of wheel/rail interaction forces in the contact area due to roughness: Journal of Sound and Vibration, v. 193, no. 1 May 30 1996. p. 83-102.

Remington, P., Webb, J., Wheel/rail noise reduction through profile modification: Journal of Sound and Vibration, v. 193, no. 1 May 30 1996. p. 335-348.

Ren, F., Hobson, W.S., Lothian, J.R., Lopata, J., Caballero, J.A., Lee, J.W., Pearton, S.J., Cole, M.W., AFM analysis of ECR dry-etched InGaP, AlInP and AlGaP: Diagnostic Techniques for Semiconductor Materials Processing II, Materials Research Society Symposium Proceedings, v. 406 1996, Pittsburgh, PA, p. 209-214.

Rhoades, Lawrence, Understanding EDMed surfaces: Cutting Tool Engineering, v. 48, no. 3 Apr 1996. 7pp.

Richharia, Purnima, Microstructural investigations of a textured black brass selective surface: Thin Solid Films, v. 272, no. 1 Jan 1 1996. p. 7-9.

Rigopoulos, Apostolos, Arkun, Yaman, Kayihan, Ferhan, Control relevant disturbance modeling of paper machine full profile properties using adaptive PCA: Control Systems, Preprints, Conference 1996. TAPPI Press, Norcross, GA, p. 35-39.

Ringel, Gabriele, Kratz, Frank, Schmitt, Dirk-Roger, Charakterisierung optischer Oberflaechen ueber ihre Mikrorauheit unter Einsatz interferometrischer, taktiler und streuender Messverfahren (Characterization of optical surfaces using interferometric, tactile and scattering microroughness measurement systems): Forschungsbericht - Deutsche Forschungsanstalt für Luft - und Raumfahrt, DLR-FB, no. 96-03 1996. 67pp.

Ritzer, Alfons, Falkner, B., Li, S.T., Bauerle, D., In-situ reflectivity measurements during pulsed-laser deposition of Bi//2Sr//2CaCu//2O//8// plus // delta: Applied Surface Science, v. 96-98 Apr 2 1996. p. 721-725.

Roberds, Brian E., Farrens, Shari N., Atomic force microscopy study on the roughness of silicon wafers correlated with direct wafer bonding: Journal of the Electrochemical Society, v. 143, no. 7 Jul 1996. p. 2365-2371.

Roland, Christopher, Effects of stress on step energies and surface roughness: MRS Bulletin, v. 21, no. 4 Apr 1996. p. 27-30.

Rosén, B.-G., Ohlsson, Robert, and Thomas, T.R., Wear of cylinder bore microtopography: Wear, v. 198, no. 1-2, p. 271-279 (1996).

Rotondaro, A.L.P., Bender, H., Heyns, M.M., Claeys, C., Protrusion formation at the edges of ion implanted regions: Journal of the Electrochemical Society, v. 143, no. 6 Jun 1996. p. L118- L120.

Rubio, J., Van Der Meulen, H.P., Mestres, N., Calleja, J.M., Wang, K.H., Ils, P., Forchel, A., Gippius, N.A., Tikhodeev, S.G., Phonon Raman scattering in quantum wires: Solid-State Electronics:An International Journal, v. 40, no. 1-8 1996. p. 707-710.

Rudzitis, J., Padamans, V., and Liepens, A., Characterization of 3D surface topography: Chemnitz, Tech. Univ., 9th Internationales Oberflächen Kolloquium, 1996, Proceedings, p. 65-70.

Ruzic, David N., Hydrogen collision dynamics on a rough nickel surface: IEEE Transactions on Plasma Science, v. 24, no. 1 Feb 1996. p. 81-82.

Sabur, M.A., Steffler, P.M., Conservative diffusion wave flood routing scheme for channel networks: Canadian Journal of Civil Engineering, v. 23, no. 2 Apr 1996. p. 566-570.

Saeki, Morihiko, Namba, Yoshiharu, Sasaki, Takatomo, Ultra-precision cutting of organic nonlinear optical crystals: Molecular Crystals and Liquid Crystals Science and Technology Section B, Nonlinear Optics, v. 15, no. 1-4 1996. p. 217-220.

Sahwi, S.Z., Mekawi, A.M., Effect of noise on surface roughness measurements: Conference Record - IEEE Instrumentation and Measurement Technology Conference, v. 1 1996. IEEE, Piscataway, NJ, USA,96CB35936. p. 232-235.

Saitoh, Hidetoshi, Kyuno, Takunori, Hosoda, Ichiro, Urao, Ryoichi, Surface morphology of polycrystalline diamond films etched by Ar** plus beam bombardment: Journal of Materials Science, v. 31, no. 3 Feb 1 1996. p. 603-606.

Sakaue, Hiroyuki, Katsuda, Yoshihiko, Konagata, Shinobu, Shingubara, Shoso, Takahagi, Takayuki, Aluminum-selective chemical vapor deposition induced by hydrogen desorption on silicon: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers, v. 35, no. 2B Feb 1996. p. 1010-1013.

Saku, Tadashi, Horikoshi, Yoshiji, Tokura, Yasuhiro, Limit of electron mobility in AlGaAs/GaAs modulation-doped heterostructures: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers, v. 35, no. 1A Jan 1996. p. 34-38.

Salanon, B., Curvature forces at crystal surfaces: Surface Science, v. 350, no. 1-3 Apr 20 1996. p. 322-328.

Salditt, T., Lott, D., Metzger, T.H., Peisl, J., Vignaud, G., Legrand, J.F., Gruebel, G., Hoghoi, P., Schaerpf, O., Characterization of interface roughness in W/Si multilayers by high resolution diffuse X-ray scattering: Physica B, Condensed Matter, v. 221, no. 1-4 Apr 2 1996. p. 13-17.

Sapoval, B., Russ, S., Localization of electrons and acoustical phonons in irregular or fractal crystallites: Disordered Materials and Interfaces, Materials Research Society Symposium Proceedings, v. 407 1996, Pittsburgh, PA, p. 253-257.

Sarkar, Kausik, Prosperetti, Andrea, Effective boundary conditions for Stokes flow over a rough surface: Journal of Fluid Mechanics, v. 316 Jun 10 1996. p. 223-240.

Sawada, Tadashi, Horie, B. Yukari, Sugiyama, Wataru, Diffuse scattering of gas molecules from conical surface roughness: Vacuum, v. 47, no. 6-8 Jun-Aug 1996. p. 795-797.

Schad, R., Barnas, J., Belien, P., Verbanck, G., Potter, C.D., Fischer, H., Lefebvre, S., Bessiere, M., Moshchalkov, V.V., Bruynseraede, Y., Influence of different kinds of interface roughness on the giant magnetoresistance in Fe/Cr superlattices: Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 339-340.

Schalk, R.M., Kundzins, K., Weber, H.W., Stangl, E., Proyer, S., Bauerle, D., STM observation of dislocation chains suitable for flux pinning in YBa//2Cu//3O//7// minus //x films: Physica C, Superconductivity, v. 257, no. 3-4 Feb 1 1996. p. 341-354.

Scheer, Bradley W., Developing a haze and microroughness reference standard: MICRO, v. 14, no. 6 Jun 1996. 10pp.

Schlegel, V., Relative friction minimization in fixed orthodontic bracket appliances: Journal of Biomechanics, v. 29, no. 4 Apr 1996. p. 483-491.

Schmidt, Donald L., Sen, Basav, Bogard, David G., Effects of surface roughness on film cooling: American Society of Mechanical Engineers (Paper) 1996. ASME, New York, 7pp 96-GT-299.

Schowalter, Leo J., Heteroepitaxy and strain—Applications to electronic and optoelectronic materials: MRS Bulletin, v. 21, no. 4 Apr 1996. p. 18-19.

Schriener, A., Albers, P., Untersuchungen zum Spuelmittel-angriff auf Bone-China-Glasuren Investigations into washing agent attacks on bone China glazes: CFI, Ceramic Forum-Int/Berichte der DKG (Deutschen Keramischen Gesellschaft), v. 73, no. 5 May 1996. p. 287-298.

Schwartz, Z., Martin, J.Y., Dean, D.D., Simpson, J., Cochran, D.L., Boyan, B.D., Effect of titanium surface roughness on chondrocyte proliferation, matrix production, and differentiation depends on the state of cell maturation: Journal of Biomedical Materials Research, v. 30, no. 2 Feb 1996. p. 145-155.

Seehofer, L., Falkenberg, G., Johnson, R.L., Structure and phases of In on Ge(001):

Surface Science, v. 352-354 May 15 1996. p. 425-429.

Segars, Ronald, Piscitelle, Louis, Verification and application of a new adsorption model for fractal surfaces: Disordered Materials and Interfaces, Materials Research Society Symposium Proceedings, v. 407 1996, Pittsburgh, PA, p. 349-354.

Seki, Kazuichi, Shimizu, Yoshio, Zhu, Kalin, Design strategy for the improvement of an existing 300kW WTGS rotor blade: Renewable Energy, v. 9, no. 1-4 Sep-Dec 1996. p. 858-861.

Seminara, Giovanni, Colombini, Marco, Parker, Gary, Nearly pure sorting waves and formation of bedload sheets: Journal of Fluid Mechanics, v. 312 Apr 10 1996. p. 253-278.

Senthil, S., Narayanan, S., Optimal preview control of a two-dof vehicle model using stochastic optimal control theory: Vehicle System Dynamics, v. 25, no. 6 Jun 1996. p. 413-430.

Sentoku, Eiichi, Tanaka, Hiroshi, Kawabata, Hiroshi, On the machinability for alumina-molding pieces (Part 1st) - cutting condition and roughness of finished surface: Funtai Oyobi Fummatsu Yakin/Journal of the Japan Society of Powder and Powder Metallurgy, v. 43, no. 4 Apr 1996. p. 493-497.

Sere, P.R., Armas, A.R., Elsner, C.I., Di Sarli, A.R., Surface condition effect on adhesion and corrosion resistance of carbon steel/chlorinated rubber/artificial sea water systems: Corrosion Science, v. 38, no. 6 Jun 1996. p. 853-866.

Shafeev, G.A., Bellard, L., Themlin, J.-M., Fauquet-Ben Ammar, C., Cros, A., Marine, W., Electroless metallization of SiC after laser ablation: Surface & Coatings Technology, v. 80, no. 1-2 Mar 1996. p. 224-228.

Sham, T.K., Naftel, S.J., Bzowski, A., Das, S.R., Xu, D.-X., Heald, S.M., Brewe, D., Kuhn, M., Synchrotron radiation studies of platinum silicide thin films: Silicide Thin Films - Fabrication, Properties, and Applications, Materials Research Society Symposium Proceedings, v. 402 1996, Pittsburgh, PA, p. 587-592.

Shen, James J., Cook, Lee M., Pierce, Keith G., Loncki, Scott B., Nonparticulate origins of light point defects on polished silicon wafers: Journal of the Electrochemical Society, v. 143, no. 6 Jun 1996. p. 2068-2074.

Sheppard, C.J.R., Scattering by fractal surfaces with an outer scale: Optics Communications, v. 122, no. 4-6 Jan 1 1996. p. 178-188.

Shigeta, Y., Endo, J., Fujino, H., Maki, K., Roughening of the surface of an Si layer grown on an Si(111)-(7 multiplied by 7) superlattice: Surface Science, v. 357-358, no. 1-3 Jun 20 1996. p. 414-417.

Shin, Jaiwon, Characteristics of surface roughness associated with leading-edge ice accretion: Journal of Aircraft, v. 33, no. 2 Mar-Apr 1996. p. 316-321.

Shin, Min-Chol, Kim, Hak-Sung, Electrochemical characterization of polypyrrole/glucose oxidase biosensor, Part I. Influence of enzyme concentration on the growth and properties of the film: Biosensors & Bioelectronics, v. 11, no. 1-2 1996. p. 161-169.

Shirai, Hajime, Arai, Takeshi, Role of hydrogen in the growth of hydrogenated microcrystalline silicon: Journal of Non-Crystalline Solids, v. 198-200, no. pt 2 May 2 1996. p. 931-934.

Siegert, Martin, Pyramid formation and coarsening during homoepitaxial growth: Evolution of Epitaxial Structure and Morphology, Materials Research Society Symposium Proceedings, v. 399 1996, Pittsburgh, PA, p. 251-256.

Simao, J., Aspinwall, D.K., Wise, M.L.H., Subari, K., Surface texture transfer in simulated tandem and temper mill rolling using electrical discharge textured rolls: Journal of Materials Processing Technology, v. 56, no. 1-4 Jan 1996. p. 177-189.

Singh, Deepinder, Hamed, Awatef, Tabakoff, Widen, Simulation of performance deterioration in eroded compressors: American Society of Mechanical Engineers (Paper) 1996. ASME, New York, 8pp 96-GT-422.

Singh, R.K., Gilbert, D.R., Fitz-Gerald, J., Harkness, S., and Lee, D.G., Engineered interfaces for adherent diamond coatings on large thermal-expansion coefficient mismatched substrates: Science, v. 272, no. 5260, p. 396-398, (1996).

Singh, Raj N., Reddy, Srinivas K., Influence of residual stresses, interface roughness, and fiber coatings on interfacial properties in ceramic composites: Journal of the American Ceramic Society, v. 79, no. 1 Jan 1996. p. 137-147.

Smirnov, V.K., Simakin, S.G., Potapov, E.V., Makarov, V.V., SIMS depth profiling of delta-doped layers in silicon: Surface and Interface Analysis, v. 24, no. 7 Jul 1996. p. 469-475.

Snigirev, A., Snigireva, I., Kohn, V.G., Kuznetsov, S.M., On the requirements to the instrumentation for the new generation of the synchrotron radiation sources. Beryllium windows: Nuclear Instruments & Methods in Physics Research, Section A, Accelerators, Spectrometers, Detectors and Associated Equipment, v. 370, no. 2-3 Feb 21 1996. p. 634-640.

Sobolev, V.V., Guilemany, J.M., Martin, A.J., Influence of surface roughness on the flattening of powder particles during thermal spraying: Journal of Thermal Spray Technology, v. 5, no. 2 Jun 1996. p. 207-214.

Sodhi, Manbir S., Tiliouine, Khalil, Surface roughness monitoring using computer vision: International Journal of Machine Tools & Manufacture, v. 36, no. 7 Jul 1996. p. 817-828.

Solomon, Fredric, Ikeuchi, Katsush, Extracting the shape and roughness of specular lobe objects using four light photometric stereo: IEEE Transactions on Pattern Analysis and Machine Intelligence, v. 18, no. 4 Apr 1996. p. 449-454.

Song, J.F., Vorburger, T.V., Stylus flight in surface profiling: Journal of Manufacturing Science and Engineering, Transactions of the ASME, v. 118, no. 2 May 1996. p. 188-198.

Staub, C., Jonsson, I.G., Svendsen, I.A., Sediment suspension in oscillatory flow—Measurements of instantaneous concentration at high shear: Coastal Engineering, v. 27, no. 1-2 May 1996. p. 67-96.

Stirner, T., Ahmed, S., Hagston, W.E., Anisotropic magnetic field effects in diluted magnetic semiconductor quantum wells: Journal of Crystal Growth, v. 159, no. 1-4 Feb 2 1996. p. 1027-1031.

Streitenberger, P., Foerster, D., Kolbe, G., Veit, P., Temperature induced smoothing of initially fractal grain boundaries: Scripta Materiala, v. 34, no. 1 Jan 1 1996. p. 111-119.

Subba Rao, K.S., Allam, M.M., Robinson, R.G., Note on the choice of interfacial friction angle: Proceedings of the Institution of Civil Engineers Geotechnical Engineering, v. 119, no. 2 Apr 1996. p. 123-128.

Sueyoshi, Hidekazu, Hamaishi, Kazuto, Nakamura, Yuzo, Kiyofuji, Jun-ichi, Effect of mechanical pretreatment on gas nitriding behavior of austenitic stainless steels: Materials Transactions, JIM, v. 37, no. 2 Feb 1996. p. 150-156.

Sugawara, A., Kikukawa, T., Haga, Y., Nittono, O., Morphological changes of branched Ge clusters caused by diffusion fields and surface roughness of Au underlayer: Disordered Materials and Interfaces, Materials Research Society Symposium Proceedings, v. 407 1996, Pittsburgh, PA, p. 331-336.

Sugiyama, Wataru, Sawada, Tadashi, Funaki, Hiroshi, Nakamori, Kenji, Effect of surface roughness on rarefied gas flow between two flat plates: Nippon Kikai Gakkai Ronbunshu, B Hen/Transactions of the Japan Society of Mechanical Engineers, Part B, v. 62, no. 596 Apr 1996. p. 1307-1312.

Sugiyama, Wataru, Sawada, Tadashi, Nakamori, Kenji, Rarefied gas flow between two flat plates with two dimensional surface roughness: Vacuum, v. 47, no. 6-8 Jun-Aug 1996. p. 791-794.

Suliman, S.M.A., Relationship between performance and sparks generated in selected cylindrical grinding experiments: Materials and Manufacturing Processes, v. 11, no. 3 May 1996. p. 491-508.

Suzuki, Susumu, Ohsaki, Hisashi, Ando, Eiichi, Materialistic difference in macroscopic friction coefficients of sputtered metal oxide thin films deposited on glass: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers, v. 35, no. 3 Mar 1996. p. 1862-1867.

Suzuki, T., Minoda, H., Tanishiro, Y., Yagi, K., REM study of high index Si(5 5 12) flat surfaces: Surface Science, v. 348, no. 3 Mar 10 1996. p. 335-343.

Svendsen, W., Schou, J., Thestrup, B., Ellegaard, O., Ablation from metals induced by visible and UV laser irradiation: Applied Surface Science, v. 96-98 Apr 2 1996. p. 518-521.

Sviridenok, A.I., Chizhik, A.A., Sveklo, I.F., Microtribological problems of physics and mechanics in smooth surface contact: Tribology International, v. 29, no. 5 Aug 1996. p. 377-384.

## 1996 T-Z

Taconet, O., Vidal-Madjar, D., Emblanch, Ch., Normand, M., Taking into account vegetation effects to estimate soil moisture from C-band radar measurements: Remote Sensing of Environment, v. 56, no. 1 April 1996. p. 52-56.

Taijing, Lu, Ng, S.C., Furukawa, J., Furuya, H., Characterization of surface microroughness of silicon wafers by a multipass Fabry-Perot Rayleigh-Brillouin scattering spectrometer: Journal of Materials Research, v. 11, no. 4 Apr 1996. p. 878-883.

Takahashi, Sennosuke, Kuboi, Osamu, Study on contact angles of Au, Ag, Cu, Sn, Al and Al alloys to SiC: Journal of Materials Science, v. 31, no. 7 Apr 1 1996. p. 1797-1802.

Takeoka, Etsuo, Saitou, Hirosi, Aida, Shuhei, Miyaguchi, Hiroaki, Isikawa, Atsusi, Iwabe, Hiroyasu, High speed end milling of hardened steel (1st report) - dynamic characteristics of air spindle and surface roughness: Seimitsu Kogaku Kaishi/Journal of the Japan Society for Precision Engineering, v. 62, no. 1 Jan 1996. p. 115-119.

Tallian, T.E., Data-fitted rolling bearing life prediction model - Part I, mathematical model: Tribology Transactions, v. 39, no. 2 Apr 1996. p. 249-258.

Tan, Yen-Hung, Lee, Sheng-Long, Wu, Homg-Yu, Effects of beryllium on fatigue crack propagation of A357 alloys containing iron: International Journal of Fatigue, v. 18, no. 2 Febr 1996. p. 137-147.

Tandon, Pushkar, Rosner, Daniel E., Codeposition on hot CVD surfaces—Particle dynamics and deposit roughness interactions: AIChE Journal, v. 42, no. 6 Jun 1996. p. 1673-1684.

Temst, K., Van Bael, M.J., Baert, M., Rosseel, E., Bruyndoncx, V., Strunk, C., Verbanck, G., Mae, K., Van Haesendonck, C., Moshchalkov, V.V., Bruynseraede, Y., Jonckheere, R., de Groot, D.G., Koeman, N., Griessen, R., Structural characterization of thin films and multilayer structures: Journal De Physique IV, JP, v. 6, no. 3 Apr 1996. p. 265-270.

Temst, K., Van Bael, M.J., de Groot, D.G., Koeman, N.J., Griessen, R.P., Wuyts, B., Van Haesendonck, C., Bruynseraede, Y., Atomic force microscopy and X-ray diffraction study of surface and interface roughness in Nb/Cu multilayers: Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 109-110.

Tezuka, Tsutomu, Nunoue, Shinya, Diameter-dependent optical losses in pillar microcavities: Journal of Applied Physics, v. 79, no. 6 Mar 15 1996. p. 2875-2878.

Thapa, B.B., Ke, T.C., Goodman, R.E., Tanimoto, C., Kishida, K., Numerically simulated direct shear testing of in situ joint roughness profiles: International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts, v. 33, no. 1 Jan 1996. p. 75-82.

Thelen, Gerhard, Lovette, Michael, Parametric study of the lubrication transport mechanism at the rail- wheel interface: Wear, v. 191, no. 1-2 Jan 1996. p. 113-120.

Thoe, T.B., Aspinwall, D.K., Wise, M.L.H., Oxley, I.A., Polycrystalline diamond edge quality and surface integrity following electrical discharge grinding: Journal of Materials Processing Technology, v. 56, no. 1-4 Jan 1996. p. 773-785.

Thompson, C.B., McDonald, J.D., Pikulik, I.I., Characterization of press roll topography: Annual Meeting, Canadian Pulp and Paper Association, Montreal, Que., Technical Section Preprints, Pt. B, 1996, p. B101-B110.

Thompson, D.J., Fodiman, P., Mahe, H., Experimental validation of the twins prediction program for rolling noise, Part 2, results: Journal of Sound and Vibration, v. 193, no. 1 May 30 1996. p. 137-147.

Thompson, D.J., On the relationship between wheel and rail surface roughness and rolling noise: Journal of Sound and Vibration, v. 193, no. 1 May 30 1996. p. 149-160.

Thompson, D.J., Rapporteur's report, Session 2: Journal of Sound and Vibration, v. 193, no. 1 May 30 1996. p. 173-174.

Tolan, M., Vacca, G., Sinha, S.K., Li, Z., Rafailovich, M.H., Sokolov, J., Lorenz, H., Kotthaus, J.P., Si/Ge films on laterally structured surfaces—An x-ray study conformal roughness: Applied Physics Letters, v. 68, no. 2 Jan 8 1996. p. 191-193.

Tolan, M., Vacca, G., Wang, J., Sinha, S.K., Li, Z., Rafailovich, M.H., Sokolov, J., Gibaud, A., Lorenz, H., Kotthaus, J.P., Thin polymer films on rough surfaces: Physica B, Condensed Matter, v. 221, no. 1-4 Apr 2 1996. p. 53-59.

Tomita, Y., Eda, H., Study of the ultra precision grinding process on a magnetic disk substrate - development of new bonding materials for fixed abrasives of grinding stone: Wear, v. 195, no. 1-2 Jul 1996. p. 74-80.

Tonder, K., Dynamics of rough slider bearings—Effects of one-sided roughness/waviness: Tribology International, v. 29, no. 2 Feb 1996. p. 117-122.

Train, C., Fermon, C., Chappert, C., Megy, A., Veillet, P., Beauvillain, P., Polarized neutron reflection investigation of a layered magnetic order in thick Co layers on Au(111): Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 87-88.

Tseng, Ampere A., Wang, Shi R., Effects of interface resistance on heat transfer in steel cold rolling: Steel Research, v. 67, no. 2 Febr 1996. p. 44-51.

Tsuboi, Shinji, Atoda, Nobufumi, Yamashita, Yoshio, Ashikaga, Kinya, Yamada, Isao, Matsuo, Jiro, Improvement of diamond X-ray mask membrane—Optical transmittance, surface roughness and irradiation durability: Microelectronic Engineering, v. 30, no. 1-4 Jan 1996. p. 207-210.

Tsuboi, Y., Ektessabi, A.M., Sennerby, L., Albrektsson, T., Otsuka, T., Iizuka, T., Johansson, C., Wennerberg, A., In vivo measurement of titanium release by PIXE: Nuclear Instruments & Methods in Physics Research, Section B, Beam Interactions with Materials and Atoms, v. 109-110 Apr 1 1996. p. 345-349.

Tsui, Frank, Wellman, Joanne, Uher, Ctirad, Clarke, Roy, Morphological transition of epitaxial rhodium (111): Evolution of Epitaxial Structure and Morphology, Materials Research Society Symposium Proceedings, v. 399 1996, Pittsburgh, PA, p. 243-249.

Tsujino, Jiro, Shiohara, Yuh, Growth process of YBa//2Cu//3O//7// minus //x films prepared by RF thermal plasma evaporation: Physica C, Superconductivity, v. 262, no. 3-4 May 20 1996. p. 236-242.

Tsunashima, Hitoshi, Fujioka, Takehiko, Abe, Masato, Sasaki, Keiichi, Influence of guideway surface roughness on a magnetically levitated vehicle with mechanical levitation control (4th report, influence of nonlinear characteristics of magnet): Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C, v. 62, no. 594 Feb 1996. p. 530-535.

Ukraintsev, V.A., Yates, John T. Jr., Role of nickel in Si(001) roughening: Surface Science, v. 346, no. 1-3 Feb 1 1996. p. 31-39.

Ulman, Abraham, Wetting studies of molecularly engineered surfaces: Thin Solid Films, v. 273, no. 1-2 Feb 1996. p. 48-53.

Unno, Hideyuki, Imai, Kazuo, Thin-SOI process using bonding and etch-back method without epitaxial growth: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers, v. 35, no. 2B Feb 1996. p. 969-972.

Uno, K., Uozumi, J., Asakura, T., Correlation properties of speckles produced by diffractal-illuminated diffusers: Optics Communications, v. 124, no. 1-2 Feb 15 1996. p. 16-22.

Vallejo, Luis E., Evaluating the variability of engineering properties of soil deposits using fractals: Geotechnical Special Publication, no. 58/1 1996. ASCE, New York, p. 353-367.

Van Avery, Jim, Nondestructive paint and bonding adhesion prediction meter for metal surfaces: International SAMPE Symposium and Exhibition (Proceedings), v. 41, no. 2 1996. p. 1203-1211.

Van Nostrand, Joseph E., Jay Chey, S., Cahill, David G., Botchkarev, A.E., Morkoc, H., Surface morphology of GaAs(001) grown by solid- and gas-source molecular beam epitaxy: Surface Science, v. 346, no. 1-3 Feb 1 1996. p. 136-144.

van Alphen, E.A.M., Colaris, A.H.J., Lenczowski, S.K.J., Schonenberger, C., de Jonge, W.J.M., NMR study of the structural properties of electrodeposited Co/Cu multilayers: Journal of Magnetism and Magnetic Materials, v. 156, no. 1-3 Apr 1996. p. 29-30.

Vazquez, L., Salvarezza, R.C., Herrasti, P., Ocon, P., Vara, J.M., Arvia, A.J., Scale-dependent roughening kinetics in vapor deposited gold: Surface Science, v. 345, no. 1-2 Jan 10 1996. p. 17-26.

Verbanck, Michael A., Assessment of sediment behaviour in a cunette-shaped sewer section: Water Science and Technology, v. 33, no. 9 1996. p. 49-59.

Verspui, M.A., van der Velden, P., de With, G., and Slikkerveer, P.J., Angularity determination of abrasive powders: Wear, v. 199, no. 1, p. 122-126, (1996).

Viera, Ricardo J., Testing and analysis of terra cotta glaze repairs: ASTM Special Technical Publication, no. 1258 Mar 1996. ASTM, Conshohocken, PA, p. 319-336.

Violette, Katherine E., Ozturk, Mehmet C., Christensen, Kim N., Maher, Dennis M., Silicon nucleation and film evolution on silicon dioxide using disilane: Journal of the Electrochemical Society, v. 143, no. 2 Feb 1996. p. 649-657.

Vu, Quoc-Bao, Stricker, David A., Zavracky, Paul M., Surface characteristics of (100) silicon anisotropically etched in aqueous KOH: Journal of the Electrochemical Society, v. 143, no. 4 Apr 1996. p. 1372-1375.

Walenciak, Matthew T., Zimmerman, Mark C., Harten, Robert D., Ricci, John L., Stamer, David T., Biomechanical and histological analysis of an HA coated, arc deposited CPTi canine hip prosthesis: Journal of Biomedical Materials Research, v. 31, no. 4 Aug 1996. p. 465-474.

Wang, T.H., Ciszek, T.F., Schwerdtfeger, C.R., Moutinho, H., Matson, R., Growth of silicon thin layers on cast MG-Si from metal solutions for solar cells: Solar Energy Materials and Solar Cells, v. 41-42 Jun 1996. p. 19-30.

Wang, Ton-Lo, Huang, Dongzhou, Shahawy, Mohsen, Huang, Kaizan, Dynamic response of highway girder bridges: Computers and Structures, v. 60, no. 6 Jul 24 1996. p. 1021-1027.

Wang, Ton-Lo, Huang, Dongzhou, Shahawy, Mohsen, Dynamic behavior of continuous and cantilever thin-walled box girder bridges: Journal of Bridge Engineering, v. 1, no. 2 May 1996. p. 67-75.

Wang, W., Ponci-Epaillard, F., Brosse, J.-C., Ausserre, D., Optical emission from tetrafluoromethane plasma and its relationship to surface modification of hexatriacontane: Plasmas and Polymers, v. 1, no. 1 Mar 1996. p. 65-85.

Wang, Yeh, Tsay, Cheng Chong, Non-Newtonian flow modeling in the mixing section of a single-screw extruder with flow analysis network method: Polymer Engineering and Science, v. 36, no. 5 Mid-Mar 1996. p. 636-642.

Wang, Yushu, Hsu, Stephen M., Effects of operating parameters and environment on the wear and wear transition of alumina: Wear, v. 195, no. 1-2 Jul 1996. p. 90-99.

Wang, Z., Ireland, P.T., Kohler, S.T., Chew, J.W., Heat transfer measurements to a gas turbine cooling passage with inclined ribs: American Society of Mechanical Engineers (Paper) 1996. ASME, New York, 10pp 96-GT-542.

Wang, Z.L., Steps and facets on annealed LaAlO//3 left brace 100 right brace and left brace 110 right brace surfaces: Surface Science, v. 360, no. 1-3 Jul 10 1996. p. 180-186.

Watanabe, Hisashi, Ishikawa, Isao, Suzuki, Motoyuki, Hasegawa, Kohji. Clinical assessments of the erbium:YAG laser for soft tissue surgery and scaling: Journal of Clinical Laser Medicine and Surgery, v. 14, no. 2 Apr 1996. p. 67-75.

Watanabe, Satoru, Vibrational study on Si(110) surface hydrogenated in solutions: Surface Science, v. 351, no. 1-3 May 1 1996. p. 149-155.

Watanabe, Toshio, Fukui, Shigehisa, Control of tactile surface-roughness sensation using ultrasonic vibration: Nippon Kikai Gakkai Ronbunshu, C Hen/Transactions of the Japan Society of Mechanical Engineers, Part C, v. 62, no. 596 Apr 1996. p. 1329-1334.

Watterson, J.D., Nicholson, K.W., Dry deposition and interception of 4-22 mu m diameter particles to a lettuce crop: Journal of Aerosol Science, v. 27, no. 5 Jul 1996. p. 759-767.

Weiss, Martin N., Srivastava, Ramakant, Groger, Howard P., Theoretical and experimental investigations of surface plasmon waveguide structures for sensing applications: Proceedings of SPIE - The International Society for Optical Engineering, v. 2695 1996. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, p. 195-201.

Wen, Shizhu, On thin film lubrication: Lubrication Science, v. 8, no. 3 Apr 1996. p. 275-286.

Wengelink, J., Engel, H., Fabrication of waveguide tapers by semitransparent mask photolithography: Microelectronic Engineering, v. 30, no. 1-4 Jan 1996. p. 137-140.

Wennerberg, Ann, On surface roughness and implant incorporation: Ph.D. thesis, Dept. of Biomaterials, Inst. for Surgical Sciences, Göteborg Univ., Sweden (1996).

Wennerberg, Ann, Albrektsson, Tomas, Lausmaa, Jukka, Torque and histomorphometric evaluation of c.p. titanium screws blasted with 25- and 75- mu m-sized particles of Al//2O//3: Journal of Biomedical Materials Research, v. 30, no. 2 Feb 1996. p. 251-260.

Wetzel, P., Saintenoy, S., Pirri, C., Bolmont, D., Gewinner, G., Roge, T.P., Palmino, F., Savall, C., Labrune, J.C., STM investigation of 2- and 3-dimensional Er disilicide grown epitaxially on Si(111): Surface Science, v. 355, no. 1-3 Jun 1 1996. p. 13-20.

Whitehouse, D.J., Enhancement of instrument and machine capabilities: Nanotechnology, v. 7, no. 1 Mar 1996. p. 47-51.

Wollrab, E., Ouyang, C., Shah, S.P., Hamm, J., Koenig, G., Effect of specimen thickness on fracture behaviour of concrete: Magazine of Concrete Research, v. 48, no. 175 June 1996. p. 117-129.

Wong, T.N., Ooi, K.T., Adiabatic capillary tube expansion devices—A comparison of the homogeneous flow and the separated flow models: Applied Thermal Engineering, v. 16, no. 7 Jul 1996. p. 625-634.

Wu, Yiqian, Talke, Frank E., Design of a head-tape interface for ultra low flying: IEEE Transactions on Magnetics, v. 32, no. 1 Jan 1996. p. 160-165.

Xiao, Rong-Fu, Reentrant oscillation in kinetic thin-film deposition: Physica A, Statistical and Theoretical Physics, v. 229, no. 2 Jul 15 1996. p. 236-243.

Xu, Wei, Zerda, T.W., Yang, H., Gerspacher, M., Surface fractal dimension of graphitized carbon black particles: Carbon, v. 34, no. 2 1996. p. 165-171.

Yakover, I.M., Pinhasi, Y., Gover, A., Study of waveguide resonators for FEL operating at submillimeter wavelengths: Nuclear Instruments & Methods in Physics Research, Section A, Accelerators, Spectrometers, Detectors and Associated Equipment, v. 375, no. 1-3 Jun 11 1996. p. 260-263.

Yamanaka, Toshiaki, Fang, Simon J., Lin, Heng-Chih, Snyder, John P., Helms, C. Robert, Correlation between inversion layer mobility and surface roughness measured by AFM: IEEE Electron Device Letters, v. 17, no. 4 Apr 1996. p. 178-180.

Yamauchi, Goro, Miller, Jan D., Saito, Hiroyuki, Takai, Kenichi, Takazawa, Hisayoshi, Ueda, Toshinobu. Wetting characteristics of PTFE particulate composites: Materials Transactions, JIM, v. 37, no. 4 Apr 1996. p. 721-728.

Yamauchi, Tatsuo, Kishimoto, Shuji, Application of vertical scanning interferometric profiler to paper surface: Paperi ja Puu/Paper and Timber, v. 78, no. 1-2 1996. p. 29-31.

Yan, D., Kaye, J.E., Balakrishnan, S., Popplewell, N., Surface roughness measurements in finish turning: International Journal of Advanced Manufacturing Technology, v. 11, no. 2 1996. p. 91-100.

Yang, Peiran, Shen, Jiankun, On the theory of time-dependent micro-TEHL for a non-Newtonian lubricant in line contacts: Lubrication Science, v. 8, no. 3 Apr 1996. p. 297-312.

Yang, Yanyi, Torrance, A.A., Oxley, P.L.B., Modelling mechanical wear processes in metallic sliding friction: Journal of Physics D, Applied Physics, v. 29, no. 3 Mar 14 1996. p. 600-608.

Yee, Youngjoo, Chun, Kukjin, Jong, Duk Lee, Kim, Chang-Jin, Polysilicon surface-modification technique to reduce sticking of microstructures: Sensors and Actuators, A, Physical, v. 52, no. 1-3 Mar-Apr 1996. p. 145-150.

Yin, Z., Tan, H.S., Smith, F.W., Measurement and modeling of optical constants for rough surface diamond thin films: Diamonds for Electronic Applications, Materials Research Society Symposium Proceedings, v. 416 1996, Pittsburgh, PA, p. 205-210.

Yokota, Masaaki, Toyokura, Ken, Role of surface fines on growth rate of L-SCMC crystals in DL-SCMC aqueous solution: AIChE Journal, v. 42, no. 3 Mar 1996. p. 896-900.

Yoon, J.Y., Patel, V.C., Ettema, R., Numerical model of flow in ice-covered channel: Journal of Hydraulic Engineering, v. 122, no. 1 Jan 1996. p. 19-26.

Yoshikawa, Masahiro, Nakamura, Atsushi, Nomura, Takashi, Ishikawa, Kenji, Surface reconstruction of GaP (001) for various surface stoichiometries: Japanese Journal of Applied Physics, Part 1, Regular Papers & Short Notes & Review Papers, v. 35, no. 2B Feb 1996. p. 1205-1208.

You, Zai-Jin, Movable bed roughness and current profiles in the presence of irregular waves with an arbitrary angle to currents: Ocean Engineering (Pergamon), v. 23, no. 3 Apr 1996. p. 225-242.

Yu, Chih-Ming, Tichy, John: Granular collisional lubrication—Effect of surface roughness, particle size and solids fraction: Tribology Transactions, v. 39, no. 3 Jul 1996. p. 537-546.

Yuan, Q., Karger-Kocsis, J., On the efficiency of interleaves in carbon fibre/epoxy composite laminates by the fractal approach: Journal of Materials Science Letters, v. 15, no. 10 May 15 1996. p. 842-845.

Yuan, Z.L., Xu, Z.Y., Zheng, B.Z., Luo, C.P., Xu, J.Z., Ge, Weikun, Zhang, P.H., Yang, X.P., Optical study of heterointerface configuration in narrow GaAs/AlGaAs single quantum wells prepared with growth interruption: Journal of Applied Physics, v. 79, no. 2 Jan 15 1996. p. 1073-1077.

Yue, T.M., Dai, Y., Lau, W.S., Examination of wire electrical discharge machining (WEDM) of Al//2O//3 particulate reinforced aluminum based composites: Materials and Manufacturing Processes, v. 11, no. 3 May 1996. p. 341-350.

Yuen, W.Y.D., Popelianski, Y., Prouten, M., Variations of friction in the roll bite and their effects on cold strip rolling: Iron & Steelmaker (I&SM), v. 23, no. 2 Feb 1996. p. 33-39.

Yutani, A., Shiraki, Y., Transport properties of n-channel Si/SiGe modulation-doped systems with varied channel thickness—Effect of the interface roughness: Semiconductor Science and Technology, v. 11, no. 7 Jul 1996. p. 1009-1014.

Zangwill, A., Some causes and a consequence of epitaxial roughening: Journal of Crystal Growth, v. 163, no. 1-2 May 2 1996. p. 8-21.

Zangwill, Andrew, Jesson, David, Chambliss, David, and Clarke, Roy, eds., 1995 MRS Fall Meeting, Evolution of Epitaxial Structure and Morphology, Materials Research Society Symposium: Proceedings, v. 399 1996, Pittsburgh, PA, 554p.

Zegelaar, P.W.A., Pacejka, H.B., In-plane dynamics of tyres on uneven roads: Vehicle System Dynamics, v. 25, no. Suppl 1996. p. 714-730.

Zegenhagen, J., Kazimirov, A., Scherb, G., Kolb, D.M., Smilgies, D.- M., Feidenhans, R., X-ray diffraction study of a semiconductor/electrolyte interface — n-GaAs(001) /H//2SO//4(Cu): Surface Science, v. 352-354 May 15 1996. p. 346-351.

Zhang, Hanzhong, Faghri, Mohammad, White, Frank M., New low-Reynolds-number k-epsilon model for turbulent flow over smooth and rough surfaces: Journal of Fluids Engineering, Transactions of the ASME, v. 118, no. 2 Jun 1996. p. 255-259.

Zhao, Y.P., Yang, H.-N., Wang, G.-C., Lu, T.-M., Extraction of real-space correlation function of a rough surface by light scattering using diode array detectors: Applied Physics Letters, v. 68, no. 22 May 27 1996. p. 3063-3065.

Zhong, Z., Nakagawa, T., Grinding of aspherical SiC mirrors: Journal of Materials Processing Technology, v. 56, no. 1-4 Jan 1996. p. 37-44.

Zhou, Gang, Deng, Tingzhang, Feller, Jeffrey R., McKenna, Mark J., Schneider, Roger L., Sarma, Bimal K., Levy, Moises, Preparation and characterization of YBaCuO high T//c superconducting thin films: IEEE Transactions on Applied Superconductivity, v. 6, no. 2 Jun 1996. p. 68-76.

Zhou, J., Grace, J.R., Brereton, C.H.M., Lim, C.J., Influence of wall roughness on the hydrodynamics in a circulating fluidized bed: AIChE Journal, v. 42, no. 4 Apr 1996. p. 1153-1156.

Zhu, Hai-Yan, Correlation between phase transformation and surface texture induced by grinding in tetragonal zirconia polycrystals: Journal of Materials Science Letters, v. 15, no. 13 Jul 1 1996. p. 1126-1128.

Zhu, Jian-Xin, Wang, Z.D., Xing, D.Y., Dong, Z.C., Differential conductance of normal metal-insulator-d-wave superconductor junctions with interface roughness: Physica C, Superconductivity, v. 260, no. 3-4 Apr 10 1996. p. 217-223.

Zolotoyabko, E., Finkelstein, Y., Blumina, M., Fekete, D., X-ray diffraction in quantum-well structures: Physica B, Condensed Matter, v. 221, no. 1-4 Apr 2 1996. p. 487-493.

Zolper, J.C., Crawford, M. Hagerott, Howard, A.J., Ramer, J., Hersee, S.D., Morphology and photoluminescence improvements from high-temperature rapid thermal annealing of GaN: Applied Physics Letters, v. 68, no. 2 Jan 8 1996. p. 200-202.

Zuiker, Christopher D., Gruen, Dieter M., Krauss, Alan R., In situ laser reflectance interferometry measurement of diamond film growth: Journal of Applied Physics, v. 79, no. 7 Apr 1 1996. p. 3541-3547.

## 1997

Barré, F., Lopez, J., and Mathia, T.G., New methods for characterising the anisotropy of engineering surfaces, *in* Rosén, B.-G., and Crafoord, R.J., eds., International Conference on Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings, v. 2, p. 479-486, (1997).

Bhushan, Bharat, Tribology and Mechanics of Magnetic Storage Devices (2nd ed.): Piscataway, NJ, IEEE, 1152 p. (1997).

Burrows, J.M., and Griffiths,B.J., A vector modelling technique for the representation of 3-dimensional surface topography, *in* Rosén, B.-G., and Crafoord, R.J., eds., International Conference on Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings, v. 1, p. 133-138, (1997).

Butler, D.L., Blunt, R.F., O'Connor, R.F., and Stout, K.J., The characterisation of cylinder liner bore polishing with 3-dimensional functional indices, *in* Rosén, B.-G., and Crafoord, R.J., eds., International Conference on Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings, v. 2, p. 517-529, (1997).

Gatzen, H.H., and Maetzig, J.C., Nanogrinding: Precision Engineering, v. 21, no. 2/3, p. 134-139 (1997).

Grigoriev, A.Ya, Chizhik, S.A., and Myshkin, N.K., Texture classification of engineering surfaces with nanoscale roughness, *in* Rosén, B.-G., and Crafoord, R.J., eds., International Conference on Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings, v. 2, p. 319-324, (1997).

He, L., and Zhu, J., The fractal character of processed metal surfaces: Wear, v. 208, nos. 1-2, p. 17-24 (1997).

Lee, S.-H., Zahouni, H., Caterini, R., and Mathia, T.G., Morphological characterisation of engineered surfaces by wavelet transform, *in* Rosén, B.-G., and Crafoord, R.J., eds., International Conference on Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings, v. 1, p. 182-190, (1997).

Mou, C.-Y., and Hsu, J.W.P., Continuum model description of thin-film growth morphology: Physical Review E, v. 56, no. 2, p. 1522-1530, (1997).

Prostrednick, D., and Osanna, P.H., The Abbott curve - well know in metrology but not on technical drawings, *in* Rosén, B.-G., and Crafoord, R.J., eds., International Conference on Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings, v. 2, p. 353-357, (1997).

Robbe-Valloire, F., Paffoni, B., Gras, R., and Blouet, J., Statistical repartition of asperities on a surface using roughness and waviness parameters, *in* Rosén, B.-G., and Crafoord, R.J., eds., International Conference on

Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings, v. 2, p. 471-478, (1997).

Rosén, B.-G., and Crafoord, R.J., eds., International Conference on Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings (2 vols.), 529 p., (1997).

Rosén, B.-G, Ohlsson, R., and Thomas, T.R., Nano metrology of cylinder bore wear, *in* Rosén, B.-G., and Crafoord, R.J., eds., International Conference on Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings, v. 1, p. 102-110, (1997).

Rudzitis, J., Padamans, V., Krizbergs, J., and Rahmen, H., Statistical mechanics of contact surfaces, *in* Rosén, B.-G., and Crafoord, R.J., eds., International Conference on Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings, v. 1, p. 127-132, (1997).

Sanna Reddy, H., Raja, J., and Chen, K., Characterization of surface texture generated by multi-process manufacture, *in* Rosén, B.-G., and Crafoord, R.J., eds., International Conference on Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings, v. 1, p. 111-118, (1997).

Scheers, J., Vermeulen, M., De Maré, C., and Meseure, K., Assessment of steel surface roughness and waviness in relation with paint appearance, *in* Rosén, B.-G., and Crafoord, R.J., eds., International Conference on Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings, v. 2, p. 252-261, (1997).

Scott, P.J., Foundations of topological characterization of surface textures, *in* Rosén, B.-G., and Crafoord, R.J., eds., International Conference on Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings, v. 1, p. 162-169, (1997).

Thomas, T.R., Fractals and surfce roughness, *in* International Colloquium on Micro- and Nanotechnology, 4th, Vienna, November 26, Proceedings: 10-p. camera-ready manuscript, (1997).

Yanagi, K., and Kumeda, Y., An evaluation of injection process by the three-dimensional characterization of the mold and product surfaces, *in* Rosén, B.-G., and Crafoord, R.J., eds., International Conference on Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings, v. 2, p. 390-395, (1997).

Zahouani, H., Spectral and 3D motifs identification of anisotropic topographical components—Analysis and filtering of anisotropic patterns by morphological rose approach, *in* Rosén, B.-G., and Crafoord, R.J., eds., International Conference on Metrology and Properties of Engineering Surfaces, 7th: Göteborg, Sweden, Chalmers University of Technology, April 2-4, Proceedings, v. 1, p. 222-230, (1997).

## 1998

Blackmore, D., and Zhou, J. G, Fractal Analysis of Height Distributions of Anisotropic Rough Surfaces: Fractals, v. 6, no. 1, p. 43-58, (1998).

Boland, J.J., and Weaver, J.H., A surface view of etching: Physics Today, v. 51, no. 8, Pt. 1, p. 34-40, (1998).

Gerdes, Stina, Cazabat, A.-M., Ström, Göran, and Tiberg, Fredrik, Effect of surface structure on the spreading of a PDMS droplet: Langmuir, v. 14, no. 24, p. 7052-7057, (1998).

Hähner, Georg, and Spencer, Nicholas, Rubbing and scrubbing (tribology): Physics Today, v. 51, no. 9, p. 22-27 (1998).

Kind, Dieter, and Quinn, T.J., Metrology—*Quo vadis*?: Physics Today, v. 51, no. 8, Part 2, p. 15-17, (1998).

Lee, Y.-L., Chen, C.-H., and Yang, Y.-M., Surface morphology and wetting behavior of poly(a-methylstyrene) thin films prepared by vacuum deposition: Langmuir, v. 14, no. 24, p. 6980-6986, (1998).

Majumdar, A., and Bhushan, B., Characterization and modeling of surface roughness and contact mechanics, *in* Bhushan, Bharat, ed., Handbook of Micro/Nanotribology, 2nd ed.: Boca Raton, FL, CRC Publ. (ca. 896 p.), Dec. 1998 (in press).

Medeiros-Ribeiro, Gilberto, Bratkovski, A.M., Kamins, T.I., Ohlberg, D.A.A., and Williams, R.S., Shape transition of Germanium nanocrystals on a Silicon (001) surface from pyramids to domes: Science, v. 279, no. 5349, p. 353-355, (1998).

Othmani, A., and Kaminsky, C., Three dimensional fractal analysis of sheet metal surfaces: Wear, v. 214, no. 2, p. 147-150 (1998).

Zangmeister, C.D., and Pemberton, J.E., In situ monitoring of the NaCl + HNO3 surface reaction—the observation of mobile surface strings: J. Phys. Chemistry, B, v. 102, no. 45, p. 8950-8953, (1998).

## 1999

Thomas, T.R., Rough Surfaces: Singapore, World Scientific Press, ca. 300 p., 1999 (in press).

Appendix II

# Selected 1996 Abstracts on Topographic and Fractal Topics in Surface Metrology

Alcock, Jeffrey, Sorensen, O. Toft, Jensen, Stig, Kjeldsteen, Per, 1996, **Comparative wear mapping techniques. II. Surface roughness and fractal dimension mapping of tungsten carbide/silicon carbide**: Wear, v. 194, no. 1-2, p. 228-237.
Pin surfaces were analysed by laser profilometry. Two roughness parameters, R//a and the fractal dimension, were investigated as a first step towards methods of quantitative wear mechanism mapping. Both parameters were analysed for their relationship to the severity and prevalence of a mechanism. Three-dimensional maps of R//a, fractal dimension, average slope and average inter-deviation spacing were produced. It was found that whilst mechanistic information for multiple mechanisms was contained within R//a and fractal dimension, without further quantitative knowledge of the surface, the influence of different mechanisms could not be separated. However, for a single mechanism, data on mechanism severity information could be obtained. This was shown to be the case experimentally for a microploughing mechanism, for both the microroughness R//a and the fractal dimension.

Almqvist, N., 1996, **Fractal analysis of scanning probe microscopy images**: Surface Science, v. 355, no. 1-3, p. 221-228.
The accuracy and precision of several algorithms, including newly developed, for calculating the fractal dimension from scanning probe microscopy images of material surfaces are investigated. The algorithm are based on the area-perimeter method, a variance method or versions of the structure function method. The latter two methods show good correspondence to computer simulated images, with known fractal dimensions, and have successfully been applied also on real images. The results show that these two methods give reliable fractal dimensions and are well suited to describe surface roughness quantitatively.

Amada, Shigeyasu, Yamada, Hiroshi, 1996, **Introduction of fractal dimension to adhesive strength evaluation of plasma-sprayed coatings**: Surface & Coatings Technology, v. 78, no. 1-3, p. 50-55.
The adhesive strength of ceramic coatings depends on the surface roughness of substrates. Taking account of the bonding mechanisms, however, surface roughness may not be a proper measure to evaluate the surface topography of substrates. Here, fractal dimension is proposed for the evaluation of surface topography. Physically the fractal dimension can include hook-shaped indentations which generate a mechanical interlocking force. By applying fractal dimension to the evaluation of the surface topography of substrates and relating it to the adhesive strength of alumina coatings, it was concluded that fractal dimension properly evaluates the adhesive strength as compared with surface roughness.

Avanesov, V.S., Zuev, M.A., 1996, **Investigation of surface topography after melting by laser beam**: Proceedings of SPIE - The International Society for Optical Engineering, v. 2713, Bellingham, WA, p. 340-343.
Experimental and theoretical investigations of surface microrelief of steels with various carbon contents were carried out after melting by continuous carbon-dioxide-laser radiation. The model advanced to describe the microrelief formation has shown the coincidence with experimental data. Some technical measures for decreasing the roughness after laser melting by moving beam were pointed out.

Bhushan, Bharat, 1996, **Nanotribology and nanomechanics of MEMS devices**: Proceedings of the IEEE Micro Electro Mechanical Systems (MEMS), IEEE, 96CH35856, p. 91-98.
MEMS devices are made of single-crystal silicon, LPCVD polysilicon films and other ceramic films. Very little is understood about tribology and mechanical characterization of these materials on micro- to nanoscales. Atomic force microscopy/friction force microscopy (AFM/FFM) techniques are increasingly used for tribological studies of engineering surfaces at scales, ranging from atomic and molecular to microscales. These techniques have been used to study surface roughness, adhesion, friction, scratching/wear, indentation, and boundary lubrication of bulk and treated silicon. Commonly measured roughness parameters are found to be scale dependent, requiring the need of scale-independent fractal parameters to characterize surface roughness. Measurements of micro-scale friction and macroscale friction show that friction values both on micro- and macroscales of all samples are about the same. The microscale values are lower than the macrovalues as there is less ploughing contribution in microscale measurements. Local variation in microscale friction is found to correspond to the local slope. Directionality in the friction is observed on microscale which results from the surface preparation and anisotropy in surface roughness. Microscratching/microwear and nanoindentation studies indicate that coated/treated silicon is superior to bare silicon. Chemically bonded lubricants appear to be suitable for MEMS devices. Finally, ultrasmooth surfaces under extremely lightly loaded conditions are required for ultralow friction and near-zero wear.

Bozhevolnyi, Sergey I., Vohnsen, Brian, Zayats, Anatoly V., Smolyaninov, Igor I, 1996, **Fractal surface characterization—implications for plasmon**

**polariton scattering**: Surface Science, v. 356, no. 1-3, p. 268-274.
We compare the scattering of surface plasmon polaritons (SPPs) at relatively smooth and rough surfaces of gold films and relate the difference in the SPP behaviour to the difference in fractality of the studied surfaces. The rough surface, which results in the strong localization of SPPs, is found to have a fractal structure with a normalized fractal dimension D approximately equals 2.26 in the spatial range 80-640 nm. It is shown that the smooth surface, which supports well-pronounced propagating SPPs, cannot be viewed as a fractal structure for discretization steps exceeding 80 nm. We conclude that in order for SPPs to be localized by surface roughness, the surface should exhibit a fractal structure in a sufficiently large range of sizes around the SPP wavelength.

Cerre, N., de Fornel, F., Goudonnet, J.P., Ladan, P.R., Guerrin, Ph., 1996, **Spatial spectroscopy with the reflection scanning microscope**: Journal of the Optical Society of America - A, v. 13, no. 7, p. 1357-1361.
Spatial spectroscopy effected with reflection scanning microscope (RSM) by modulating the fiber-sample distance is shown to give more information that is not contained in topographic images obtained with RSM in a constant-intensity mode. When the sample is homogeneous, the spectroscopic image shows the variation of reflectivity that is due to the roughness of the surface. These images, in correlation with the topographic ones, should lead to a better description of the samples. For the homogeneous sample studied, a comparison of the topographic and spatial spectroscopic images allows one to know whether the fiber is close enough to the sample, i.e., the fiber is in a proper operating zone. For an inhomogeneous sample with a certain roughness the analysis of the images is more complicated. To deconvolute these two sources of information, one can vary the wavelength to produce a map of the different materials present on the surface.

Christiansen, S., De Chiffre, L., 1996, **Topographic investigation of the wear resistance of PTFE seals in sliding contact with ceramic materials**: Tribology Transactions, v. 39, no. 2, p. 434-440.
This paper is concerned with the wear of PTFE seals used in connection with reciprocating ceramic-coated rods. An analysis of the relationship between the surface topography of ceramics and wear of PTFE seals was undertaken, formulating three hypotheses which have been investigated experimentally using a seal test rig and a system for three-dimensional surface roughness analysis. It was observed that no running-in of the rod surface takes place and, consequently, the tribological situation never stabilizes. It was shown that seal wear rate is dependent on the number of asperities penetrating the lubricant film thickness, the wear rate being correlated to a functional parameter (S//p//k// //o) which was especially developed to describe the peak height above the mean plane. Furthermore, it was illustrated how the structure of ceramics allows the lubricant to flow unhindered between isolated asperities in contrast to the traditionally polished structure of steel which restricts the lubricant flow.

Dove, J.E., Frost, J.D., Dove, P.M., 1996, **Geomembrane microtopography by atomic force microscopy**: Geosynthetics International, v. 3, no. 2, p. 227-245.
The use of surface roughness measurements for evaluating and predicting the performance of composite geosynthetic structures has become of interest to the civil engineering profession, especially those involved in the design of landfills. This paper introduces a recently developed method, tapping mode atomic force microscopy, for measuring smooth high density polyethylene geomembrane microtopography. The surface morphology and the degree of surface roughness are examined at a scale comparable to fine-grained soil particles used in composite landfill liners. The results show that within a 10 µm**2 scan area, asperity relief ranges from approximately 0.46 to 2.4 µm. Surface roughness is quantified using mean roughness, root mean square roughness, surface roughness parameter, and fractal dimension.

Eisenbarth, E., Meyle, J., Nachtigall, W., Breme, J., 1996, **Influence of the surface structure of titanium materials on the adhesion of fibroblasts**: Biomaterials, v. 17, no. 14, p. 1399-1403.
Of utmost importance for the successful use of an implant is a good adhesion of the surrounding tissue to the biomaterial. In addition to the surface composition of the implant, the surface topography also influences the properties of the adherent cells. The aim of this investigation was thus to study the influence of the surface structure of the substrate on the formation of focal contacts and on the orientation of cultivated gingival fibroblasts by means of fluorescence microscopy. A further goal was to determine the effect of the material composition on the cell shape, on the assumption that in each case a lengthening of the cells can be expected to provide a more favourable adhesion behaviour than a spherical cell shape. In order to describe the shape of the cell, a shape factor was defined which was calculated from the area covered by the cells and from their circumference. To determine the influence of the surface structure, substrate platelets of cp-titanium, TiAl6V4 and TiTa30 were ground. Onto these specimens human gingival fibroblasts of the 5th to 7th passages were cultivated. After a culture time of two days the cells were fixed and stained. The number of orientated cells was determined as a function of the surface roughness of the substrate. The number of orientated cells was shown to increase - independent of the material - with increasing roughness of the ground substrate. On a polished surface the number of orientated cells was 11% (average peak-to-valley height 0.04 µm), at a peak-to-valley height of 1.36 µm the number of orientated cells increased to 72%. It could be observed that the orientated cells had a higher density of focal contacts where they were in contact with the edges of the grinding grooves. In order to determine the effect of the surface composition, gingival fibroblasts were cultured for 14d on polished substrate specimens of cp-

titanium, TiAl6V4 and TiTa30 and examined for differences in shape. The cells grown on cp- titanium and on TiTa30 had shape factors of 1.76 and 1.58 respectively, whereas those grown on TiAl6V4 had a shape factor of 0.93. The unfavourable spherical shape of the fibroblasts (resulting in a poor adhesion) grown on TiAl6V4 after a culture period of 14d may be the result of a locally increased vanadium concentration in the substrate, with an accompanying increase in the release of toxic vanadium ions.

Forseth, T., Helle, T., 1996, **Principles and application of a method for assessing detailed paper surface topography**: Annual Meeting - Technical Section, Canadian Pulp and Paper Association, Preprints, Pt. B, Montreal, Que., p. B287-B291.
A method for detailed paper surface topography assessment is presented which uses a mechanical stylus profilometer. A device controls it to perform parallel scans at intervals of some 2.5 μm. The instrument is attached to a computer which collects and transfers the recorded information into topographical maps and other numerical representations of height distribution. The instrument is also equipped with a microscope and a videoprinter, allowing the paper samples to be accurately repositioned in the profiling instrument, allowing the exact same area to be compared before and after the treatment. In this paper, experimental methods and analysis procedures are explained, and results are presented from a study on calendered commercial paper, containing mechanical pulp fibers, before and after moistening.

Gjonnes, Liv, 1996, **Development of surface topography during cold rolling of twin-roll cast aluminum**: Wear, v. 192, no. 1-2, p. 216-227.
A study of the development of surface structure during cold rolling of twin-roll cast aluminum has been carried out owing to its importance for appearance, forming properties and corrosion resistance. It is found that the as-cast surface determines the development of the surface topography during cold rolling. This is due to the large roughness associated with the groove/shingle configuration of the as-cast surface. During the first rolling pass the large grooves are deformed into gorges with flat areas between. Peaks are smeared opposite to the rolling direction forming shingles in the subsequent passes. These shingles do not completely adhere to the underlying bulk material and consequently deform heterogeneously on further rolling. Cross hatches may develop on the surface of the shingles. The cross hatches increase in size and spacing on successive rolling, and new ones are formed. Varying amounts of aluminum fines were found in the lubricant as the ends of the shingle are detached from the surface during deformation. The final rolled surface is characterized by thin shingles which overlap and make regions of lamellae in a narrow thickness range on the surface. Many cross hatches of varying size and distribution penetrate one or several of these lamellae.

Gollion, Ph., Grenet, G., 1996, **Determination of fractured steel surface roughness by atomic force microscopy using fractal-based approaches**: Surface and Interface Analysis, v. 24, no. 4, p. 282-285.
Roughness images of fractured steel were recorded at micrometric level (100-10 000 nm) using an atomic force microscope. We have observed a power law variation of the profile root-mean-square vs. the analysis length. If there is no overall tilt of the images, this variation is indicative of the (self-affine) fractal character of the surface morphology. Using first- principle methods, the fractal dimension of the studied fractured steel surfaces is found to be D equals 1.13 plus or minus 0.06 at the micrometre scale and thus of the same order as previously published values obtained at the centimetre and millimetre scales.

Heyvaert, I., Krim, J., Van Haesendonck, C., Bruynseraede, Y., 1996, **Surface morphology and kinetic roughening of Ag on Ag(111) studied with scanning tunneling microscopy**: Physical Review E, v. 54, no. 1, p. 349-353.
The scanning tunneling microscope has been used to study the topography and the evolution of the surface roughness during the growth of Ag on Ag(111). The surface roughness and the scaling exponents are compared to exponents obtained from growth models in order to reveal the underlying growth mechanism. For thicknesses below 250 angstrom, the growth is found to proceed via 3D island growth. For thicker layers, the surface become s irregular. Roughness exponents close to 1 have been obtained, in agreement with other experimental results as well as with the theoretical models.

Hull, D., 1996, **Influence of stress intensity and crack speed on fracture surface topography—mirror to mist transition**: Journal of Materials Science, v. 31, no. 7, p. 1829-1841.
The transition from very smooth 'mirror' crack growth to the early stages of roughening associated with 'mist' has been investigated using a range of surface topography techniques. The fracture mechanics properties of the brittle, glassy and isotropic epoxy resin have been characterized using compact tension (CT) and double torsion (DT) tests. In general, the results provide an insight into the development of crack instabilities under dynamic conditions and a basis for interpreting the progressive development of roughness up to macroscopic bifurcation.

Lee, Si C., Ren, Ning, 1996, **Behavior of elastic-plastic rough surface contacts as affected by surface topography, load, and material hardness**: Tribology Transactions, v. 39, no. 1, p. 67-74.
Surface roughness plays an important role in affecting friction, wear, and lubrication of contacting bodies. A small change in the distribution of the asperity heights and widths can have a significant effect on the performance variables which include the real area of contact, the average gap, and the average asperity contact pressure. A series of contact simulations were

conducted in order to investigate the effects of the surface topography, material hardness and load on the deformation behavior of the rough surfaces. These surfaces were numerically generated by computer and varied widely in statistical roughness properties, ranging from isotropic to strongly anisotropic. The current simulations took into account the elastic-plastic deformation behavior of the asperities. Using the contact simulation results, the performance variables were curve-fitted to convenient analytical formulas as functions of the surface roughness parameters, material hardness, and load.

Lopes, M.C.V., dos Santos, S.G., Hasenack, C.M., Baranauskas, V., 1996, **Si-SiO//2 electronic interface roughness as a consequence of Si-SiO//2 topographic interface roughness**: Journal of the Electrochemical Society, v. 143, no. 3, p. 1021-1025.
Numerical calculations were used to assess the probable microscopic distribution of the electric field along or close to the actual Si-SiO//2 interface of a metal oxide semiconductor (MOS) capacitor biased into accumulation. Silicon wafers were oxidized to 20 nm at 1150 degree C by rapid thermal oxidation, according to two different thermal recipes in order to yield different Si-SiO//2 interface roughnesses. After oxide removal, typical atomic force microscopy (AFM) line scans of the silicon surface were exported into the MEDICI program as a description of the Si-SiO//2 interface in order to calculate the electric field distribution within the oxide layer of a bidimensional MOS capacitor biased into accumulation. This distribution was found to be highly inhomogeneous even for relatively smooth Si-SiO//2 interfaces, displaying strong local electric field enhancements, the spatial distribution of which will be called electronic roughness in this work. Simple local oxide thinning at the position of the protrusions cannot account for these field enhancements, thus indicating that the shape of the protrusion is dictating the electronic roughness. The electronic roughness could be correlated with electric breakdown characteristics of actual MOS capacitors prepared on these wafers.

Miyazima, Sasuke, Matsuura, Shu, 1996, **Morphology of the fungus aspergillus oryzae and nidulans**: Disordered Materials and Interfaces, Materials Research Society Symposium, Pittsburgh, PA, Proceedings, v. 407, p. 301-306.
A variety of growth manner of the fungus Aspergillus oryzae and nidulans under varying environmental conditions such as the nutrient concentration, and medium stiffness are investigated, ranging from a homogeneous Eden-like to a ramified DLA-like pattern. The roughness sigma (l, h) of the growth front of the band-shaped colony, where h is the mean front height within l of the horizontal range, satisfies the self-affine fractal relation under favorable environmental conditions.

Ohlsson, Robert, 1996, **A topographic study of functional surfaces**: Göteborg, Sweden, Department of Production Engineering, Chalmers University of Technology, unpublished Ph.D. thesis, paging unknown.
Surface topography through the years has taken on increased importance, because of the rise in quality demands. The surface often has to meet additional functional demands when products become more complex in accordance with customer preferences. This poses great demands on the manufacturing process to produce the characteristics needed for optimal function. This makes the field of surface topography not only interesting but necessary, since erroneous specifications can be very costly and result in a nonfunctional surface. This thesis is a contribution to the area of surface topography. The results are presented in eight separate but related papers concerning how to measure and characterise the topography on functional surfaces enabling control of the manufacturing in order to ensure that the desired surface properties are obtained. The results presented are relevant for many engineering surfaces even though mainly one of them has been used in this work: the surface of the cylinder liner in motor vehicle engines. When manufacturing such a surface, knowledge about the interdependence between functional demands, characterisation, and manufacturing of the surface is essential. A PC-based knowledge system, Interactive Surface Modelling (ISM), has been developed, making a structured storage of the surface-related information possible. The concept used in ISM is to divide the functional surfaces into separate functional requirements and connect these with proper design parameters, process variables, and measuring strategies. The system also comprises databases with standards and reference literature making it a useful support in the manufacturing of surfaces. A great amount of effort has been made in order to use 3D surface roughness measuring and evaluation, since it opens up a whole range of possibilities to understand the surface from its functional aspect. Advantages of 3D measurements and peculiarities involved in this technique are discussed together with methods for optimising the measuring strategy. Two different types of instruments for these measurements have been evaluated: stylus and focus detection. An Atomic Force Microscope (AFM) has been used here as a reference instrument to give a quantitative judgement of the deviation between the two instruments. The wear process in the cylinder liner has been studied by measuring unworn and worn surfaces using effective relocation and replication techniques. The AFM was used and was found to be a necessary complement to ordinary stylus instruments for a proper characterisation of the wear process. The new 3D topography information accessible by the AFM made it possible to verify that the plasticity index could be used for the prediction of wear, requiring only the measuring of slopes in the surface. The cylinder liner surface also was found to have a fractal behaviour over more than three orders of magnitude in sampling distance.

Pawelski, Hartmut, 1996, **Applicability of fractal concepts to surface roughness**: Steel Research, v. 67, no. 4, p. 144-148.

The stochastic part of metal surface profiles can be described by means of fractal geometry. The scaling behaviour of the roughness-depth as function of the basis length is related to the non-integral fractal dimension. Regular fractals, which are constructed similarly to the Koch-curve, are not capable of reproducing typical roughness-depth distributions. More adequate is the Weierstrass-Mandelbrot function. If the bearing area ratio approximately follows a power law, the parameters can be easily determined from the exponent and the form of the roughness-depth distribution, as is shown for a technical surface after cold-rolling. If the Weierstrass-Mandelbrot function is used in two classical friction models, the influence of the parameters including the fractal dimension on the friction coefficient in the case of dry surfaces can qualitatively be estimated.

Pawlus, P., 1996, **Study of the dependence of the functional properties of the cylinder liner surface layer on the operating conditions**: Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, v. 210, no. 1, p. 17-27.
The paper presents results of the measurements of the surface roughness and physical properties of the outer layer of honed cylinders. The results of wear measurement of the cylinders and piston rings mating with them during running-in and during automotive engine operation under artificially increased dustiness conditions are presented and analysed. Interdependences among the state of the cylinder liner outer layer and operating parameters of the engines after running-in are also analysed. Additionally, the honed cylinder liners were used as specimens in wear resistance tests performed in the presence of lubricating oil with some amount of grinding particles. The results of the measurements of specimen and counter-specimen wear, as well as friction force and temperature at the friction surfaces during the test, are also presented and analysed. It was found that abrasive wear resistance of the honed cylinder liner depends on the operating conditions. During engine operation under increased dustiness conditions cylinder wear intensity depends mainly on the initial surface topography. Under conditions of low relative speed, low temperature and constant load, cylinder wear resistance in the case of large wear values depends on physical properties of the surface layer. However, when the amount of wear is smaller than the initial surface height, cylinder wear intensity in two studied cases depends mainly on its surface topography.

Press, W., Tolan, M., Stettner, J., Seeck, O.H., Schlomka, J.P., Nitz, V., Schwalowsky, L., Mueller-Buschbaum, P., and Bahr, D., 1996, **Roughness of surfaces and interfaces**: Physica B, v. 221, no. 1-4, p. 1-9.
X-ray reflectivity is now a common tool for investigating density profiles of thin films and multilayers in a nondestructive manner. In contrast to the specularly reflected beam the nonspecular diffuse intensity is sensitive to the lateral structure of rough interfaces. The most reliable results are obtained from simultaneous fits of all available data (i.e. reflectivity together with all diffuse scans) with a single set of parameters. It turns out that diffuse scattering experiments from a large class of systems can be described by correlation functions of self-affine fractal surfaces. Two layer systems serve as test cases: (1) A CoSi//2/Si-layer system grown by molecular beam epitaxy (MBE) and (2) Langmuir-Blodgett films. The analysis within the distorted-wave Born approximation (DWBA) of the scattering from the silicide sample gives a large amount of information, e.g. strong vertical correlations. For the topmost surface a comparison between scanning tunneling microscopy (STM) and X-ray results leads to very good agreement. Nine and eleven monolayer Langmuir-Blodgett films with high defect concentrations also can be successfully analyzed with the fractal model. The lateral lengths obtained from the diffuse scattering and grazing-incidence diffraction (GID) agree.

Provder, Theodore, Kunz, Barbara, 1996, **Application of profilometry and fractal analysis to the characterization of coatings surface roughness**: Progress in Organic Coatings, v. 27, no. 1-4, p. 219-226.
Quantitation of the analysis of coatings surface roughness by a contact profilometer was undertaken to obtain improved repeatability and meaningfulness of data. This effort involved interfacing the profilometer to a personal computer for data acquisition and analysis, optimizing operational variables involved in the measurement process and improving methods for quantitative data analysis of the roughness profiles. The quantitative methods of data analysis explored included the use of various surface profile roughness averages, power spectrum analysis through zone integrals, auto-correlation function analysis and fractal analysis of the surface roughness profile. Quantitative parameters obtained from the above methods were correlated with visual and optical methods for evaluating appearance for a variety of coatings. The superiority of correlation with evaluations of appearance and repeatability of multiple runs will be demonstrated for fractal numbers obtained from a fractal analysis of surface roughness profiles.

Rappich, J., Lewerenz, H.J., 1996, **Photo- and potential-controlled nanoporous silicon formation on n- Si(111)—an in-situ FTIR investigation**: Thin Solid Films, v. 276, no. 1-2, p. 25-28.
The microtopography of n-Si (111) in acidic fluoride-containing solution is strongly influenced by the electrode potential under illumination. The surface condition changes between flat, rough and porous, respectively. The thickness of the hydrogen-terminated porous silicon layer depends on the photocurrent density and reaches a saturation value, where the porosity is preserved. The surface roughness and porosity during the photoelectrochemical etching process was investigated by in-sitü Fourier transform infrared spectroscopy using multiple internal reflection techniques due to the low IR absorption of the Si-H stretching mode. Additional single internal reflection measurements show no formation of silicon oxide during the light-assisted corrosion reaction. The surface topography was inspected ex situ by field emission

scanning electron microscopy with a resolution of about 2 nm.

Razafitrimo, H., Gao, Y., Feld, W.A., Hsieh, B.R., 1996, **Layer-wise topographic study of a polymeric light-emitting diode—Indium-tin oxide/poly(2,3-diphenyl-p-phenylene vinylene)/Ag**: Synthetic Metals, v. 79, no. 2, p. 103-106.
Scanning tunneling microscopy was used to characterize surface topographies relevant to polymeric light-emitting diodes (LEDs) whose active medium is a thin film of poly (2,3-diphenyl-p-phenylene vinylene) (DP-PPV). We performed a sequence of topographic studies on an indium-tin oxide (ITO) substrate, a DP-PPV film deposited on the ITO substrate, and a Ag layer of thickness of about 100 angstroms as evaporated on the DP-PPV film. ITO showed a granular structure, DP-PPV exhibited a fibrous-like bundled structure, and the Ag layer formed clusters whose surface roughness was comparable to the layer thickness. The different surface topographies were quantified by using the scaling of the height-height correlation functions. 15 Refs.

Roberds, Brian E., Farrens, Shari N., 1996, **Atomic force microscopy study on the roughness of silicon wafers correlated with direct wafer bonding**: Journal of the Electrochemical Society, v. 143, no. 7, p. 2365-2371.
Atomic force microscopy has been used to quantitatively determine the surface roughness of silicon substrates as a function of processing and limitations to direct wafer bonding ability. This data is conveniently converted into a power spectrum creating a description of the topography which contains information about the amplitude and frequency of the surface undulations. Following initial characterization, the wafers were subjected to typical device manufacturing processes resulting in various degrees of increased roughness. An empirical correlation was developed between the roughness spectrum and bondability of (100) silicon wafers. Data on the roughening of wafers due to various standard integrated circuit processing steps were obtained and used to identify processes which promote wafer-to-wafer direct bonding. The fractal dimensions of the surfaces have been calculated and are discussed.

Rosèn, B.-G., Ohlsson, Robert, and Thomas, T.R., 1996, **Wear of cylinder bore microtopography**: Wear, v. 198, no. 1-2, p. 271-279.
Atomic force microscopy (AFM) reveals additional 3D topography information on tribology surfaces previously measured and evaluated by conventional 2D stylus technologies. This paper deals with the implications of the more detailed topographical information scanned from cast iron automotive cylinder liners. Worn and unworn surfaces measured both by AFM and stylus techniques were compared visually and quantitatively using an effective relocation technique. Quantitative comparison was made of 3D and 2D surface parameters, such as root mean square roughness, and slope, significant for the tribological behaviour of the surfaces. The extra surface features found by the AFM measurements (e.g. steeper slopes and more peaks and valleys) significantly change the numerical values of the roughness parameters, and this scale-dependent difference, when compared with conventional stylus-measured parameters, points to the possibilities of deepening the understanding of cylinder liner lubrication in the light of more finely detailed measurements.

Sheppard, C.J.R., 1996, **Scattering by fractal surfaces with an outer scale**: Optics Communications, v. 122, no. 4-6, p. 178-188.
Scattering by surfaces with the correlation function given by a modified Bessel function of the second kind, including the special case of exponential correlation, is considered. These surfaces behave as fractals with an outer scale. The treatment is based on the introduction of normalized spatial frequencies in both the transverse and axial directions, which shows clearly the scaling properties of the parameters. The bidirectional reflectance distribution function is given, and the limiting cases of smooth and rough surfaces are discussed. In particular, analytic expressions are given for scattering by rough surfaces.

Simao, J., Aspinwall, D.K., Wise, M.L.H., Subari, K., 1996, **Surface texture transfer in simulated tandem and temper mill rolling using electrical discharge textured rolls**: Journal of Materials Processing Technology, v. 56, no. 1-4, p. 177-189.
The surface texture of cold reduced steel sheet of the type used for automotive applications plays an important role during subsequent processing operations. The paper outlines the results of an extensive series of electrical discharge texturing (EDT) experiments aimed at evaluating the effect of workpiece rotational speed and flushing method on roll texture parameters, specifically surface roughness (Ra) and peak count (Pc), in both the axial and circumferential directions. The EDT rig comprised a DC servo quill assembly fitted with a single graphite electrode connected to a dual voltage pulse generator. In addition results are presented from a 'tandem mill' simulation which gives texture transfer parameters from the EDT roll to the sheet steel (CSI) for a 3% reduction. High speed steel rolls (M2) were used in a four high Stanat Mann mill. Finally the effects of overlaying a second 'temper roll' texture on the sheet steel are detailed for reductions of 0.5, 1.0 and 1.5%. Scanning electron micrographs are included of the various textured surfaces together with some 3-D topographical representations.

Thompson, C.B., McDonald, J.D., Pikulik, I.I., 1996, **Characterization of press roll topography**: Annual Meeting - Technical Section, Canadian Pulp and Paper Association, Preprints, Pt. B 1996, Montreal, Que, p. B101-B110.
Surface profilometry data have been collected for a range of established and experimental press roll materials, including granite. None of the height or shape parameters derived from the data were able to clearly distinguish between granite and the other materials, either in terms of surface texture or surface functionality. The autocorrelation function gave the best correlation with sheet release, the fractal dimension was

the only other parameter that showed any trend with release. Although surface roughness was not able to characterize press roll release, the ratio of root mean square roughness to average roughness appears to be a convenient qualitative way of measuring the surface texture of granites as they wear. Press roll surface texture involves contributions from long-range waviness, macro-texture and micro-texture. Macro-texture appears to be important for the behaviour of water films in the nip.

Vallejo, Luis E., 1996, **Evaluating the variability of engineering properties of soil deposits using fractals**: Geotechnical Special Publication, no. 58/1 1996. ASCE, New York, p. 353-367.
Soil deposits are non-homogeneous. This non-homogeneity of soil deposits is reflected in the irregular distribution with respect to depth of many of their engineering properties. In general the more non-homogeneous are soils in the field, the more irregular is this distribution. An assessment of the degree or extent of variability of the engineering properties in soil deposits is usually made from a visual inspection of the plots of the properties versus depth. The present study presents a quantitative method to measure the level of variability with respect to depth of the engineering properties of soil deposits. The method used relies on the concept of fractal dimension from fractal theory. The fractal dimension measures the geometry of irregular profiles using a fractional number that varies between 1 and 2. The fractal dimension value is equal to 1 for smooth, straight line profiles. For rough profiles, the fractal dimension approaches a value of 2. Profiles representing the distribution with depth of the normalized permeability coefficient ratio, natural water content, unconfined compressive strength, angle of shearing resistance, and standard penetration resistance for various soil deposits were evaluated. The fractal dimension for the profiles varied in value between 1.1736 and 1.5851. In general, it was determined that high fractal dimension values were associated with plots of engineering properties versus depth that were rough or highly variable. The fractal dimension concept proved to be a powerful and simple mathematical tool to measure the irregularity of the distribution with respect to depth of the engineering properties in soil deposits.

Vazquez, L., Salvarezza, R.C., Herrasti, P., Ocon, P., Vara, J.M., Arvia, A.J., 1996, **Scale-dependent roughening kinetics in vapor deposited gold**: Surface Science, v. 345, no. 1-2, p. 17-26.
The roughening kinetics of gold deposits grown from vapor was studied by scanning tunneling microscopy. The dynamic scaling yielded the following growth exponents alpha (I) equals 0.90 plus or minus 0.06 and beta (I) equals 0.25 plus or minus 0.06 for L//s less than d//s, and alpha (II) equals 0.37 plus or minus 0.05 and beta (II) equals 0.45 plus or minus 0.06 for L//s greater than d//s, where L//s is the scan length and d//s is the average diameter of columns. The scaling properties of the domain-dependent-surface roughness exponents allowed us to give the rationale for experimental data on the fractal behavior of thin metal films.

Wennerberg, Ann, 1996, **On surface roughness and implant incorporation**: Ph.D. thesis, Dept. of Biomaterials, Inst. for Surgical Sciences, Univ. Göteborg, Sweden.
Purpose: The aim of the present work was threefold: 1. To develop a method for non-destructive surface roughness characterisation of implants. The method had to be suitable for use with a range of implant designs and materials. 2. To investigate experimentally the influence of surface roughness on bone formation around implants and, thereby establish if there is an optimal range of surface roughness. 3. To investigate the application of a topographical measuring technique for use with clinical material in implant research.
Materials and Methods: A confocal laser surface scanning microscope designed for topographical characterisation, was tested and adapted to enable measurements of different implant types including screw-shaped designs. Comparisons were made with a contact stylus profilometer and an atomic force microscope with the aim of ensuring the accuracy and reliability of the optical confocal laser profilometer. A series of six studies was undertaken. 318 threaded implants with a diameter of 3.7 mm, length 6 to 7 mm and a pitch-height of 0.6 mm were inserted in 56 New Zealand white rabbits. Implants of varying surface roughness were produced by a blasting procedure using 25, 75, and 250 μm sized particles of Al2O3 and 25 μm particles of TiO2. As-machined, (i.e. turned) implants served as controls. The implant surface roughness was measured with the confocal laser scanner (TopScan 3D). After different implantation times, the animals were euthanised. The implants were evaluated with respect to the peak removal torque, the percentage of bone-to-implant contact and the percentage of bone inside the threads. Two studies utilised clinical oral and orthopaedic implants.
Results: The TopScan 3D was found to be suitable for surface topographical characterisation of different designs of implants. The results from the animal experiments demonstrated, generally, higher removal torques and higher percentages of bone-to-implant contact for implants blasted with 25 and 75 μm sized blasting particles than with as-turned or 250 μm blasted implants. The corresponding average roughness for the 4 surfaces was 1 μm, 1.5 μm, 0.6 μm, and 2.1 μm. When comparing the 25 and the 75 μm blasted implants it was found that 75 μm blasted screws showed the stronger bone fixation. The investigation of clinical oral implants demonstrated considerable variation with respect to the surface topography. This was true not only for implants manufactured with different surface modifications but also for implants produced by comparable methods and to comparable optical finishes. The retrieved orthopaedic implants demonstrated no correlation between surface roughness and, a number of factors including implant loading time.
Conclusions: The TopScan 3D system was shown to be a suitable measuring instrument for implants intended for experimental purposes as well as for clinical applications. Furthermore, implants prepared with a surface structure without a dominating pattern, and with an average surface roughness of about 1.5 μm, an average wavelength of about 11.1 μm and a developed

area ratio of 1.5 were found to have the firmest bone fixation among the investigated surface structures.

Wennerberg, Ann, Albrektsson, Tomas, and Lausmaa, Jukka, 1996, **Torque and histomorphometric evaluation of c.p. titanium screws blasted with 25- and 75- µm-sized particles of Al//2O//3**: Journal of Biomedical Materials Research, v. 30, no. 2, p. 251-260.
A comparison was made between screw-shaped c. p. titanium implants blasted with either 25- or 75- µm particles of Al//2O//3. The implant surfaces were investigated with respect to topography and composition before implantation in rabbit bone. Grit blasting with 25- or 75- µm particles produced two different surface roughnesses, but no significant difference in the surface composition for the two surfaces. After 12 weeks insertion time in the rabbit tibia and femur, a higher removal torque and more bone-to-metal contact was found for the implants blasted with 75- µm particles compared with the 25- µm-blasted ones.

Yamauchi, Tatsuo, Kishimoto, Shuji, 1996, **Application of vertical scanning interferometric profiler to paper surface**: Paperi ja Puu/Paper and Timber, v. 78, no. 1-2, p. 29-31.
A new type of surface profiler known as a vertical scanning interferometric profiler was evaluated using coating base paper and the respective coated papers before and after supercalendering. Accuracy of the profiler was checked by comparing the curves obtained. The results showed that the profiler is an excellent tool for investigating the surface topography of paper materials on both macroscopic and microscopic scales.

## Appendix III

# Internet Access to Surface Metrology

The presence of industrial surface topography on the World Wide Web is limited and does not yet compare with that of terrain modeling in the Earth sciences **(Pike, 1998)**. Metrology Web sites tend to focus on instrumentation and commercial services rather than on topographic analysis *per se*. A brief introduction may be gained from a French firm, Digital Surf, at **http://www.digitalsurf.fr/**, which describes its commercial software for 2-D and 3-D analysis as well as industrial applications to cosmetics, automobiles, and iron and sheet-steel. An excellent introduction to manufacturing standards from ISO may be consulted at **http://www.iso.ch/infoe/intro.html**. Very brief, but informative primers are available for surface texture (**http://www.mech.port.ac.uk/Info-by-Dept/Manf-and-Mgt/metrology/surface.html**) and *asperities*, micro-surface hill- and ridge-tops (**http://www.msm.cam.ac.uk/tribo/asperity.htm**).

The Production Engineering Department at Chalmers University in Sweden has a Web site, at **http://www.pe.chalmers.se/home.html**, that describes work on automobile engine cylinder-liners, sheet metal, and geared-wheel surfaces. A detailed analysis of metal-surface patterns milled by abrasive water-jet technology is illustrated at **http://www.itek.chalmers.se/homepage/mop6cifr/exp54.htm**. A 1996 article in the quality-control magazine Quality, on the role of scanned-probe microscopes in the study of surfaces of automotive coatings and finishes, auto bumper materials, and magnetic-recording heads is at **http//www.qualitymag.com/1096f3.html**. Another 1996 Quality article describes the role of digital filters in measuring surface roughness (**http//www.qualitymag.com/03q1.html**).

TopoMetrix, a major manufacturer of scanning-probe microscopes, has a good Web site at **http://www.topometrix.com/**. An introduction to the atomic force microscope by Advanced Surface Microscopy, Inc. (Indianapolis) and several applications are well illustrated at **http://www.a1.com/asm/index.html**. A general introduction to nano-surface processes in the fabrication of silicon wafers for the microelectronics industry, from Uppsala University, is at **http://www.mises.teknikum.uu.se/ilia/gen.html**. Activities of the Precision Engineering Center at Huddersfield University, UK, where Prof. K.J. Stout (an authority on surface topography) became Dean of Engineering in 1997, may be followed at **http://www.hud.ac.uk/schools/engineering/research/ultrap/preceng.htm**. A series of IDL-based computer routines written by David Windt at Bell Laboratories for analyzing 2-D and 3-D surface-roughness data are available free at **http://www.bell-labs.com/project/topo/**.