

**Positions Available**

**ASSISTANT PROFESSOR  
POSITIONS**

**Materials Science and  
Engineering Department  
Rensselaer Polytechnic Institute**

The Materials Science and Engineering Department of Rensselaer Polytechnic Institute is seeking exceptionally well-qualified candidates for tenure-track faculty positions at the Assistant Professor level. The Department has broad interests and world-class expertise in ceramics and glasses, electronic materials, metals, polymers, and composites.

Candidates must have a doctoral degree and an excellent record of accomplishment in materials research. Dedication to high-quality teaching is essential. Responsibilities of these positions include teaching undergraduate and graduate courses, supervision of graduate students, scholarly research, and generation of significant research funding.

Applications will be considered until the positions are filled. Send inquiries and applications, including a statement of research and teaching goals, a list of publications, and a minimum of three references to:

Prof. Richard W. Siegel, Head  
Materials Science and  
Engineering Department  
Rensselaer Polytechnic Institute  
110 Eighth Street  
Troy, New York 12180-3590  
Phone (518) 276-6373  
Fax (518) 276-8554



*Rensselaer has a strong institutional commitment to the principles of diversity. In that spirit, we are particularly interested in receiving applications from a broad spectrum of people, including women, minorities, disabled individuals, and veterans.*

**DIRECTOR**

**The Wiener Laboratory of the  
American School of Classical  
Studies at Athens, Greece**

Applications are invited for the position of **Director** of The Wiener Laboratory of the American School of Classical Studies at Athens, Greece. Applicants should have an area of expertise in one of the primary areas of the Lab's research programs (geoarchaeology, human skeletal analysis, zooarchaeology) with an established publication record and demonstrated administrative and fund raising abilities. A strong background in natural science, experience in collaborating with archaeological and classical scholars, and a commitment to Aegean archaeology is desired. Under the supervision of the Director of the School, the Director of the Lab is responsible for developing and administering the research and workshop programs, collections, and facilities of the Lab as well as maintaining and enlarging established networks with other laboratories and institutions. He/she chairs the local administrative committee and an international science advisory committee. Salary (\$30,000-\$40,000) commensurate with rank and experience; housing allowance, qualified for TIAA/CREF after two years if not previously enrolled. Term July 1, 1996 to June 30, 1997, eligibility for renewal. Deadline for applications is **November 15, 1995**. Applicants must include a letter concerning his/her views on the future direction of the Wiener Laboratory, a curriculum vitae, and the names of three references that may be contacted. Application materials should be sent to the search committee chair:

Prof. George Rapp, Jr., Director  
Archaeometry Laboratory  
University of Minnesota  
Duluth, MN 55812, USA  
Phone: (218) 726-7629  
Fax: (218) 726-6979

**POSTDOCTORAL ASSOCIATES  
AND RESEARCH POSITIONS IN  
MATERIALS SCIENCE  
Princeton University**

The Princeton Center for Complex Materials (PCCM), an NSF-funded Materials Research Science and Engineering Center at Princeton University is accepting applications for postdoctoral associates and research staff positions. Primary research programs are: Electronic Transport in Non-Fermi-Liquid Materials, Organic Thin Films and Quantum Structures, Microstructured Macromolecular Soft Materials, Bioinspired Processing of Composites. Other research positions may also be available in Princeton Materials Institute research unaffiliated with PCCM. PhD in science or engineering required. Salary commensurate with experience and field. Send CV to: PCCM, c/o Princeton Materials Institute; Princeton University; 70 Prospect Avenue; Princeton, NJ 08540-5211.

*Princeton University is an equal opportunity  
affirmative action employer.*

**ADJUNCT LECTURER POSITION  
University of Michigan**

The Department of Materials Science and Engineering at the University of Michigan, Ann Arbor, is seeking candidates for a nontenure-track lecturer. Responsibilities include: assisting or leading in the development of new undergraduate teaching materials and methods that place a strong emphasis on multimedia presentation techniques; the development of self-paced, interactive learning modules; participation in the development and teaching of new undergraduate laboratory modules that place a strong emphasis on processing and physical and mechanical property characterization. The department currently enrolls approximately 140 undergraduate students and is an integrated materials program encompassing metals, ceramics, polymers, and EMO materials. Applicants must have a PhD in materials science and a demonstrated interest in undergraduate education. Minimum one year appointment, renewable to three years based on funding and performance. Send resume and list of references to:

Prof. Albert F. Yee, Chairman  
Department of Materials Science  
and Engineering  
The University of Michigan  
2300 Hayward Street  
Ann Arbor, MI 48109-2136  
or  
afyee@engin.umich.edu

*An Equal Opportunity Affirmative Action Employer*

**ENGINEER**

**Michigan Ion Beam Laboratory  
Department of Nuclear Engineering  
University of Michigan**

Applications are invited for an engineer position in the areas of ion beam assisted deposition (IBAD) and ion implantation and analysis. Responsibilities include operation and maintenance of a high vacuum IBAD system, carrying out experiments and assisting experimenters, as well as assisting in the operation and maintenance of an ion implanter and a tandem accelerator. Applicants should have a minimum of a BS in a field related to surface science and should be knowledgeable in deposition systems and techniques, ion implantation, high vacuum systems, electronics, high voltage systems and power supplies, and must be able to interface with experimenters. Experience with PCs and instrumentation interfacing is preferable. Please submit a resume and three references to: Prof. Gary S. Was, Department of Nuclear Engineering; University of Michigan; Ann Arbor, MI 48109-2104; FAX: (313) 763-4540; e-mail: gsw@umich.edu.

*The University of Michigan is an Affirmative Action/Equal Opportunity Employer.*

**Positions Available**

**RESEARCH PHYSICIST  
Naval Research Laboratory  
GS-1310-14**

\$60,925 (or higher step in accordance with regulations)

Pay is based on a 5.48% locality pay adjustment - base pay \$57,760

The Naval Research Laboratory is actively recruiting for a Research Physicist to independently perform research in theoretical and experimental physics and to serve as a research Program Manager with responsibility for formulating research programs, soliciting funds for and guiding research in the areas of bio/molecular engineering, advanced materials, self-assembling structures, colloidal systems, and advanced electro-optic device assessment. The selectee will utilize a number of techniques required to elucidate the structure, physical properties, and function of the microstructures/phases in relation to their molecular architecture. It is expected that the selectee will utilize the results from the basic research programs to formulate application-oriented programs of technological relevance to the Navy and DoD.

Position requires a bachelors degree or higher in physics or a related field, one year of specialized experience equal to the GS-13 level, and demonstrated experience in the areas of complex fluids, liquid crystals, and polymeric systems with special relevance to electro-optic, pyroelectric, fiber optic biosensors, and holographic applications including self-assembling lipid micro- and nano-structures, and cubic phases for biomedical and material development applications as well as demonstrated experience in utilizing and applying the following equipment and techniques: fiber optic biosensors, dielectric spectroscopy, photon correlation spectroscopy, differential scanning calorimetry, polarization and differential interference contrast microscopy, synchrotron techniques, and x-ray and electron diffraction techniques.

To apply: Interested applicants may contact Ms. Patti Reed at (202) 767-3031 to request a copy of Vacancy Announcement #69-0016-95, application forms, and/or information. Applicants should submit a comprehensive Personal Qualifications Statement (SF-171) postmarked by **September 30, 1995** to:

Naval Research Laboratory  
Human Resources Office (Attn: Code 1812.1PCR)  
4555 Overlook Avenue, S.W.  
Washington, DC 20375-5320

*An Equal Opportunity Employer-U.S. Citizenship Required.*

**DEAN  
College of Engineering  
University of Washington**

The University of Washington invites applications and nominations for the position of Dean, College of Engineering. The College offers undergraduate, master's, and PhD degrees in all major engineering disciplines. The College has a faculty of 240, 1,250 graduate and 1,700 undergraduate students. It is ranked in the top ten percent of colleges of engineering for its excellence in education and research.

The Dean is responsible for the direction of teaching, research, development, and relations with the external professional community and is the College's representative to the University administration.

We seek a candidate with the leadership and vision necessary to influence the shape of engineering education and science in the 21st century at the University of Washington and in the Pacific Northwest. Candidates should have an established reputation in engineering education as an engineer or applied scientist, a strong record of research accomplishments, and competence in organizational leadership and management. Applicants should be prepared to assume the position by July 1, 1996.

Nominations or applications with resumes should be received by **February 15, 1996**. Please submit to:

Committee on the Deanship of the  
College of Engineering  
Prof. Jean-Loup Baer, Chair  
301 Gerberding Hall, Box 351230  
University of Washington  
Seattle, WA 98195-1230

*The University of Washington is an equal opportunity, affirmative action employer. Women and minority candidates are encouraged to apply.*

**MATERIALS ANALYSIS SPECIALIST  
PPG Industries Inc.**

PPG Industries Inc. Chemicals Research & Development is in search of a Materials Analysis Specialist. This position involves providing hands-on problem solving and leadership in the Analytical Materials Analysis Laboratory near Pittsburgh, PA. This position will require skills in thermal analysis (TGA, DSC, TMA, DMA, and DEA) and optical microscopy, including optical crystallographic, interferometric, fluorescence, and metallurgical techniques. Project work will involve the solution of materials problems involving polymers, ceramics, pigments, and metals.

Qualified candidates will have a PhD or an equivalent in Materials Science, with at least 5 years related industry experience. The candidate will also have proven problem solving expertise, leadership ability, excellent oral and written communication skills, as well as excellent teamwork skills.

PPG Industries, an equal opportunity employer, offers a competitive compensation package commensurate with experience. Qualified candidates should send a resume along with introductory letter before **October 1, 1995** to:

PPG Industries Inc.  
Chemicals Research  
and Development  
Human Resources-File #AN-2  
440 College Park Drive  
Monroeville, PA 15146



**RESEARCH STAFF MEMBER  
PLASMA MODIFICATION OF MATERIALS  
University of Wisconsin-Madison**

The Engineering Research Center for Plasma-Aided Manufacturing at the University of Wisconsin-Madison will be hiring a research staff member in the area of Plasma Modification of Materials. Duties include, but are not limited to: development of plasma implantation processes and experiments for a wide range of materials such as semiconductors, glasses, polymers, and ceramics. The processes are designed to modify material properties such as wear, lubricity, solubility, porosity, and conductivity. Experience with implantation processes, applications of implanted materials, plasma diagnostics and/or surface characteristics would be very desirable. The level of the appointment is dependent upon background and experience. The initial appointment is for one year, and is renewable contingent upon performance and funding availability. The Engineering Research Center for Plasma-Aided Manufacturing is a cross-disciplinary program supported by the National Science Foundation and a consortium of 32 companies. Persons interested in this position should send a curriculum vita to Prof. J. L. Shohet, Director, Engineering Research Center for Plasma-Aided Manufacturing; University of Wisconsin-Madison; 1410 Engineering Drive; Madison, Wisconsin 53706.

*The University of Wisconsin-Madison is an EO/AA employer.*

The Research Centre Jülich (KFA) is a national research centre jointly funded by the Federal German and North Rhine-Westphalian state governments with a staff of about 4 500 and is a member of the Association of National Research Centres. Our five major interdisciplinary research priorities are materials science and structure of matter, information technology, energy technology, environmental research and life sciences.

At our department "Institute of Solid State Research" (IFF) there is a vacancy for a scientist (m/f) as the

## Director (C 4)

of the newly created institute "Scattering Methods in Solid State Physics" with special emphasis on scattering of neutrons and synchrotron radiation.

The Institute of Solid State Research (IFF) of the KFA Jülich consists of seven experimental and three theoretical physics institutes with the mission of carrying out condensed matter research covering the whole range from basic science to applications. At our DIDO reactor there is a broad variety of modern instruments available for investigations of the structure and dynamics of condensed matter by neutron scattering. Research with synchrotron radiation is carried out at various national and international facilities, in part using KFA-owned and -operated beam lines and experimental equipment.

Scientists (m/f) with experience in the development of scattering techniques with neutrons and/or synchrotron radiation are invited to apply. The candidates should have an established research record in an area of current interest in solid state physics and should be capable of leading an interdisciplinary institute in a cooperative style. Readiness to carry out joint research projects, within the current materials science programs, with other KFA institutes, universities or industry is expected.

The successful candidate will be appointed jointly to a chair in experimental physics at one of the universities within the state of "Nordrhein-Westfalen" and then seconded to take on the responsibilities at the KFA. The salary will conform to the C 4 scale of the German Civil Service. Candidates are required to have "Habilitation" or equivalent scientific qualifications. The KFA Jülich would like to increase the number of women in leading positions and therefore especially encourages qualified women to apply.

Applications including a curriculum vitae, list of publications and a short summary of scientific activities should be sent by **30 September 1995** to

**Vorstand der  
Forschungszentrum Jülich GmbH  
D-52425 Jülich · Germany**

**Positions Available**

**TENURE-TRACK  
ASSISTANT PROFESSOR  
MATERIALS SCIENCE/CONDENSED MATTER EXPERIMENTALIST  
Department of Physics & Astronomy  
The University of Toledo**

The Department of Physics and Astronomy at the University of Toledo anticipates an opening at the tenure-track Assistant Professor level effective on or before September 1996. The applicant will be expected to have strong commitments to teaching at both graduate and undergraduate levels, to advising MS and PhD student research, and to the vigorous pursuit of external funding for his/her research program. A PhD degree is required and postdoctoral experience is expected. The candidate is expected to contribute actively to a thin-film/materials science research program with existing strengths in the areas of photovoltaics, integrated optics, and flat panel display technologies. Existing film growth facilities include rf and dc sputtering, plasma-enhanced CVD, pulsed laser deposition, ion beam deposition, and thermal evaporation. Substantial facilities for materials characterization and device analysis facilities support these efforts.

Nominations or applications should include a curriculum vitae, a complete list of publications, evidence of teaching skills, a statement of research and teaching interests, and the names and addresses of a least three references. Please send this information to: Prof. A. D. Compaan, Search Committee; Department of Physics and Astronomy; The University of Toledo; Toledo, OH 43606. Consideration of candidates will begin on November 1, 1995.

*The University is an Equal Opportunity/Affirmative Action Employer M/F/D/V.*

**FACULTY POSITION IN  
APPLIED PHYSICS  
California Institute of Technology**

The Applied Physics program at Caltech invites applications for one tenure-track position as assistant professor. We are seeking highly qualified candidates who are committed to a career in research and teaching. Exceptionally well-qualified applicants may be considered at the associate or full professor level. We are especially interested in applicants from the areas of device and/or materials physics as it applies to optics, organic and/or inorganic solid state materials, or any topic within the broadly defined scope of applied physics, including bioscience.

Interested applicants should submit a resume with a list of publications and the names of three professional references to: K. J. Vahala, MS 128-95; Caltech; Pasadena, CA 91125. The term of the initial appointment is normally four years, and appointment is contingent upon completion of PhD.

*Caltech is an Equal Opportunity/Affirmative Action Employer. Women, minorities, veterans, and disabled persons are encouraged to apply.*



**FACULTY SEARCH  
Materials Science  
Materials Engineering**

The MIT Department of Materials Science and Engineering has searches in progress for tenure track Assistant Professors. Faculty members are sought with demonstrated potential, creativity and teaching ability in any aspect of the field of materials science and engineering. These positions are potentially open for persons specializing in any of the materials classes (metals, ceramics, polymers or electronic materials), or more broadly in materials science and engineering.

**The Department has specific interests in expanding its faculty in the areas of biomaterials, industrial ecology, materials manufacturing, materials chemistry and magnetic materials, but highly qualified individuals with other materials interests will be considered.**

Doctorate required and experience desirable. Salaries and benefits are competitive. Positions will be filled only if exceptional candidates are found. Appointment to a more senior position is possible based on experience and accomplishments.

Interested persons should send a complete resume including a list of publications and names and address of three persons who could supply letters of reference. This material should be sent to: **Professor Thomas W. Eagar, Head, Department of Materials Science and Engineering, Massachusetts Institute of Technology, Building 8-309, 77 Massachusetts Avenue, Cambridge, MA 02139-4307.**

MIT is an Equal Opportunity/Affirmative Action Employer  
MIT is a non-smoking environment

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY**

**POST-DOCTORAL RESEARCH  
ASSOCIATE-SURFACE SCIENCE,  
Analytical Sciences Center, MCR, St. Louis**

Monsanto Company currently has a position available for a Post-Doctoral Research Associate-Surface Science.

The position involves both routine and fundamental characterization of materials (polymers, metals, catalysts, biological and pharmaceutical materials) using Surface Analytical techniques. The principal responsibility includes interaction and collaboration with scientists from the 15 business units of Monsanto whose problems require in-depth, problem-solving using insights from surface characterization. The development of new or improved experimental protocols is anticipated. The opportunity for interaction and participation in Monsanto-sponsored university collaborative programs in surface science is available. This job is a hands-on laboratory position with the opportunity to publish in peer reviewed scientific journals.

Requirements include a Ph.D. in Chemistry, Physics, Chemical Engineering, Polymer or Materials Science with a concentration in Surface Analysis. A strong background and experience in the use of techniques, such as XPS, AES and SIMS is essential. Sufficient understanding of other characterization techniques is desirable to facilitate multidisciplinary research with other Analytical Science Center members. The individual must be a strong team player; possess superior organizational and communication skills; be able to work on multiple projects concurrently and have excellent hands-on technical skills.

Monsanto offers an excellent salary and benefits package. Please send your resume to: **Ruth Ann Norton; Mail Zone O2B; Job Code RMF1; MONSANTO COMPANY; 800 N. Lindbergh Blvd.; St. Louis, MO 63167. Equal Opportunity Employer.**

**Monsanto**

**Monsanto**

**MULTIPLE POSITIONS  
WITH EXPERIENCE IN THIN FILM  
DEPOSITION, FIELD EMISSION  
TECHNIQUES, OR DIAMOND  
GROWTH CHARACTERIZATION  
SI Diamond Technology, Inc.**

SI Diamond Technology, Inc., an aggressive, Houston-based company involved in the development of the next generation of flat panel displays, has multiple openings at their facility in Austin, Texas, for highly motivated, talented people to work on completion of their diamond-based field emission display. These immediate openings require people who have education and/or experience in diamond growth and characterization, thin film deposition techniques, and field emission flat panel displays. A PhD in physics or a related field or 10+ years of experience is required. Salary commensurate with experience. Please send resumes to:

Marjane Ensminger,  
Dir./Human Resources  
SI Diamond Technology, Inc  
2435 North Blvd.  
Houston, TX 77098



**Hurry to advertise in the MRS Fall Meeting issue of the MRS Bulletin!**

November advertising deadline: October 2, 1995

Theme: IC Metallization for Current Manufacturing Applications

The Research Centre Jülich (KFA) is a national research centre jointly funded by the Federal German and North Rhine-Westphalian state governments with a staff of about 4 500 and is a member of the Association of National Research Centres. Our five major interdisciplinary research priorities are materials science and structure of matter, information technology, energy technology, environmental research and life sciences.

At our department "Institute of Solid State Research" (IFF) there is a vacancy for a scientist (m/f) as the

## Director (C 4)

of the newly founded institute "Electroceramic Materials".

The Institute of Solid State Research (IFF) consists of seven experimental and three theoretical physics institutes with the mission of carrying out condensed matter research covering the whole range from basic science to applications. The IFF plans to found a new institute to investigate electroceramic materials with application potential, particularly in microelectronics, optoelectronics and sensor technology. Also ionic conductors are considered as a possible complement. For the necessary extension of preparative techniques, we primarily envisage thin films and film structures.

Applications are invited from scientists (m/f) who have experience in the preparation and investigation of electroceramic, in particular dielectric materials and thin film systems, and are capable of initiating a scientifically attractive research programme. Candidates should be capable of leading an interdisciplinary institute in a cooperative style. Readiness to carry out joint research projects, within the current materials science programmes, with other KFA institutes, universities, as well as with industry is expected.

The successful candidate will be appointed jointly to a chair in experimental physics at one of the universities within the state of "Nordrhein-Westfalen" and then seconded to take on the responsibilities at the KFA. The salary will conform to the C 4 scale of the German Civil Service. Candidates are required to have "Habilitation" or equivalent scientific qualifications. The KFA would like to increase the number of women in leading positions and therefore especially encourages qualified women to apply.

Applications including a curriculum vitae, list of publications and a short summary of scientific activities should be sent by **30. September 1995** to

**Vorstand der  
Forschungszentrum Jülich GmbH  
D-52425 Jülich · Germany**

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At our department "Institute of Solid State Research" (IFF) there is a vacancy for a scientist (m/f) as the

## Director (C 4)

of the newly created institute "Soft Matter Research".

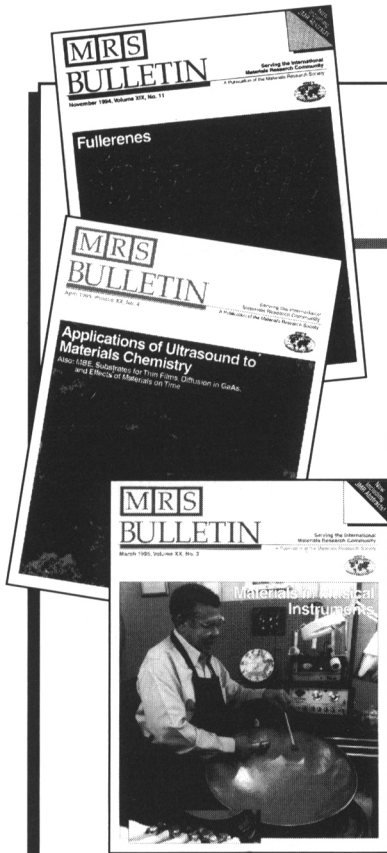
The IFF consists of seven experimentally and three theoretically oriented institutes working on condensed matter research from the atomic and molecular basis up to applications. In the already existing research area of soft matter, at present polymers, membranes and complex fluids are being investigated experimentally and theoretically with neutron scattering as the primary experimental focus. It is planned to enlarge this scientific area by creating a new institute. The intention is to add to the spectrum of experimental methods with preference given to multidimensional NMR, but also optical, dielectrical or mechanical methods are envisaged. The new institute will aim at elucidating the structure and dynamics of soft matter on an atomic and molecular scale and their consequences for macroscopic properties.

Applications are invited from scientists who have a record of successful investigations of condensed matter by multidimensional NMR methods. Their scientific interest should be in the area of soft matter and should also emphasize preparative aspects. Scientific expertise in the microscopic origin of the mechanical properties of soft matter would be advantageous. Applicants should be capable of heading an institute operating on an interdisciplinary basis and should be prepared to cooperate with other institutes in the KFA, with research institutions, universities and industry.

The successful candidate will be appointed jointly to a chair in experimental physics at one of the universities within the state of Nordrhein-Westfalen and then seconded to take on the responsibilities at the KFA. The salary will conform to the C 4 scale of the German Civil Service. Candidates are required to have "Habilitation" or equivalent scientific qualifications. The KFA Jülich would like to increase the number of women in leading positions and therefore especially encourages qualified women to apply.

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**Vorstand der  
Forschungszentrum Jülich GmbH  
D-52425 Jülich · Germany**



# The MRS Bulletin

A great reason to join MRS (if you haven't already)

Monthly subscription **FREE** with your membership!

► Regular Members: \$75 ► Student Members: \$25

Contact:



**Materials Research Society**

9800 McKnight Road, Pittsburgh, PA 15237

Phone: (412) 367-3004, x402; FAX: (412) 367-4373

E-mail: INFO@MRS.ORG

950157

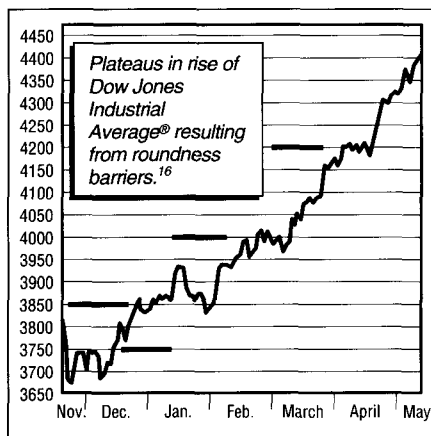
## POSTERMINARIES

### ROUND NUMBERS #

*(Come all you rounders, for I want you to hear/The story of a brave engineer<sup>1</sup>)*

Whatever it is that makes a number round, it imbues that number with a powerful psychological advantage over less round numbers.<sup>2</sup> It was a trivial example that raised my consciousness of this very human foible. Some time ago, the speed limit signs posted on the roads where I work were amended. The limit stated in units of miles per hour (*mph*) was supplemented with a metrified<sup>3</sup> version. I have no particular prejudice against kilometers but must confess that for road signs I still mentally convert to miles which are hardwired into my subconscious sense of speed.<sup>4</sup> I just multiply by 0.6, which is good enough for my psyche and for my speedometer.

Then the nit-picking physicist in me took control of my more common senses and was horrified at the approximation used to metrify. In *mph* it's 30 which computes roughly to 48.28032 *kph*, a value that



would not come close to fitting on the sign to say nothing of its lack of readability. I'm sure that's an important traffic sign consideration. The posted number was an

even 48 *kph*. Naturally, I wondered why the *mph* limits are always in multiples of 5 *mph*.  $MOD(5) = 0$  is apparently important.<sup>5</sup> Perhaps our normal per limb complement of fingers and toes is relevant, but I suspect it's more than that. The metrified version can't also meet this stringent criterion, but is compelled to at least satisfy  $MOD(1) = 0$ .<sup>6</sup> It quickly becomes apparent when studying this phenomenon that the more general case is  $MOD(n) = 0$ , where (*n*) tries to be an integer with as many trailing zeroes as possible.

I saw that road sign at a time when the Dow Jones Industrial Average<sup>®</sup> was oscillating around 3650. I found myself referencing its performance against 3700 as if that were some sacrosanct benchmark. Not 3690 or 3703, but the nice round 3700. More recently, passing the 4000 mark for the first time was announced, if not hailed, as a milestone. Never mind that