

Positions Available

FACULTY POSITION

**Microelectronics Materials Processing and Manufacturing
University of Maryland**

The Department of Materials and Nuclear Engineering at the University of Maryland invites applications for a tenure-track assistant professor position in the general expanding area of electronic materials processing for microelectronics manufacturing. The immediate materials research environment at Maryland includes a new NSF Materials Science and Engineering Center; CALCE, an NSF IUCRC for advanced packaging; and the Institute for Systems Research, an NSF Engineering Research Center emphasizing process control and optimization as well as device reliability.

The Department seeks a creative and stimulating individual with genuine commitment to cross-disciplinary, team-oriented research; devotion to education; and a substantial interest in understanding and pursuing the technology goals of the industry.

The University of Maryland actively subscribes to a policy of equal opportunity and will not discriminate against any employee or applicant because of race, color, national origin, age, sex, sexual orientation, disability, marital status, religion, political affiliation, or personal appearance.

Interested candidates should mail a complete resume and a brief professional-interests statement to:

Search Committee, c/o Ms. Antoinette Wirth
Secretary to the Search Committee
Department of Materials and Nuclear Engineering
University of Maryland, College Park, MD 20742-2115

For full consideration, the application should be received by the Department before **May 30, 1997**.

Equal opportunity employer.

STAFF SCIENTIST

Ernest Orlando Lawrence Berkeley National Laboratory currently has an opportunity for a full-time Staff Scientist to work in its state-of-the-art National Center for Electron Microscopy (NCEM). The successful candidate will conduct materials science research as well as lead the development and operation of the In Situ Microscopy program.

This position requires a background in transmission electron microscopy. You must have experience in dynamic experimentation, specimen preparation and advanced microscopy techniques, including high-resolution imaging, high-voltage microscopy, convergent beam diffraction, micro-analytical techniques or computer image analysis/interpretation. A Ph.D. in the physical sciences is strongly preferred.

Please send resume and cover letter to: **Lawrence Berkeley Laboratory, Staffing Office, Job #MRT/4891, One Cyclotron Road, MS 938A, Berkeley, CA 94720.**



Berkeley Lab is an equal opportunity employer committed to the development of a diverse workforce.

WANTED

**Teams for Developing
New Spectrometers
at LANSCE**

As part of a major improvement to the Los Alamos Neutron Science Center (LANSCE), the Department of Energy is planning to support the construction of up to six new neutron scattering spectrometers. LANSCE is asking members of the international scientific community to form Spectrometer Development Teams to design, build, and operate these spectrometers for their own research programs. For more information, please visit our web site at <http://www.lansce.lanl.gov>

LETTERS OF INTENT NOW WELCOME

Deadline: April 30, 1997

Contact A. Archuleta, ala@lanl.gov (505) 665-1010 or Dr. G. Smith, gsmith@lanl.gov, (505) 665-2842

**FACULTY POSITIONS
Physics of Materials
Department of Physics
University of Waterloo**

The Department of Physics, University of Waterloo, invites applicants for three tenure-track positions at the assistant professor level, one in each of the following areas of experimental physics in applied material research: (1) biophysical studies of materials, biomedical materials, x-ray diffraction of biological macromolecules, soft condensed matter; (2) photonic materials, semiconductors applied to optoelectronics; and (3) applied materials processing and development, laser microprocessing, material science in a space environment; although outstanding candidates in other fields of materials research will also be considered. In exceptional cases, appointment at a more senior level will be considered. Appointments will be available **September 1, 1997**.

Applicants must have a PhD degree and postdoctoral experience with a strong record of research; strong interactions with industry will be encouraged. Duties include research, teaching at undergraduate and graduate levels, and supervising graduate students. Salary range commensurate with qualifications and experience. Candidates should submit a curriculum vitae, an outline of research accomplishments, a brief research plan, a statement of their teaching goal, and the names and addresses of at least three referees by **April 30, 1997** to Dr. J.R. Lepock, Chair, Department of Physics, University of Waterloo, Waterloo, Ontario, Canada, N2L 3G1; 519-888-4567, ext. 2214; e-mail physics@uwaterloo.ca; fax 519-746-8115.

In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. The University of Waterloo encourages applications from all qualified individuals, including women, members of visible minorities, native peoples, and persons with disabilities. These appointments are subject to the availability of funds.

Positions Available

**DEAN
School of Engineering
University of Dayton**

The University of Dayton invites applications and nominations for the position of Dean of the School of Engineering. The University is seeking to fill this position by **July 1, 1997**.

The University: The University of Dayton, a Catholic co-educational institution founded by the Society of Mary (the Marianists) in 1850, offers a wide variety of undergraduate programs as well as numerous master and several doctoral programs. The University enrollment of nearly 10,000 students includes about 6,000 full-time undergraduates. The University of Dayton is the largest independent university in the State of Ohio and the Research Institute with 400 members and is among the top 10 universities in federally sponsored research with annual research of approximately \$50 million. The Air Force technology laboratories, a major source of research funding, are located at Wright-Patterson Air Force base in Dayton, Ohio. The University's 80-acre campus offers a rich living and learning environment to its essentially residential student body. The Dayton metropolitan area has a population of over 830,000 and offers many cultural, recreational, and educational amenities.

The Position: The School of Engineering has programs in undergraduate engineering and engineering technology and both master and doctoral programs in engineering with an approximate enrollment of 1,650. The Dean is to provide leadership for a school that is committed to excellence in teaching, research, scholarship, and service to the community. The Dean is responsible for developing and administering academic programs; promoting research, scholarship, and faculty development; planning budgets; and representing the School both within the University and in the community.

Qualifications: Candidates for the position should possess the background required for a tenured professorship within the School. This includes an earned doctorate, evidence of scholarly and research accomplishments, demonstrated teaching effectiveness at both the undergraduate and graduate levels, and a record of external financial support for research and/or educational purposes. Candidates should also have experience in administration in which they developed and demonstrated leadership, managerial, and communicative skills.

Nominations and Applications: Applications should include: (1) a letter briefly detailing accomplishments in the areas of academic administration, research, and teaching; (2) a completed curriculum vitae; and (3) names of three references. The University is strongly committed to the principle of diversity. Women, minorities, individuals with disabilities, and Vietnam era veterans are encouraged to apply. Please submit applications and nominations by **March 31, 1997**.

Dr. Gordon A. Sargent, Chair, Search Committee for Dean School of Engineering
University of Dayton, St. Mary's Hall 200, Dayton, OH 45469-1620
e-mail: sargent@picard.admin.udayton.edu

The University of Dayton is an equal opportunity/affirmative action employer.

**FACULTY POSITION
Department of Materials Science and Engineering
Johns Hopkins University**

The Department of Materials Science and Engineering at the Johns Hopkins University is seeking applicants to fill a tenure-track faculty position. The position will be offered at a rank commensurate with the qualifications of the successful applicant. The applicant selected will be expected to teach at both the undergraduate and graduate levels, as well as to develop innovative research programs. A genuine commitment to excellence in teaching and supervision of graduate student research is essential. Currently, faculty conduct research in areas including nondestructive evaluation and characterization of materials, thin films and nanostructured materials, ceramics, piezo- and ferroelectrics, electrochemistry, inorganic composites, and high temperature materials. Applicants whose technical interests will broaden the Department's research base, especially into areas of biomedical implant materials and materials conservation/degradation (including, for example, corrosion, aging aircraft, aging infrastructure, art and antiquities), will be of particular interest for this position. The Department also is interested in considering applicants who would strengthen activities in current research areas.

A broad emphasis on materials science within the GWC Whiting School of Engineering provides opportunity for interaction with faculty members of other departments who are active in materials subspecialties of their own engineering discipline. Additional materials research activities at Johns Hopkins include biopolymers, tissue engineering, polymer chemistry and processing, high rate deformation, nanoclustered materials, electronic devices, MEMS materials, magnetic materials, and tribology.

Please send applications including a curriculum vitae, statement of research interests, and three letters of reference to: Dr. James W. Wagner, Chair of the Search Committee, Department of Materials Science and Engineering, Johns Hopkins University, 102 Maryland Hall, Baltimore, MD 21218.

*The Johns Hopkins University is an equal opportunity/affirmative action employer.
Women and minority candidates are especially encouraged to apply.*

**FACULTY POSITION
Future Industry-Oriented
Materials Division
Toyota Technological Institute**

A faculty position is available in the Division of Future Industry-Oriented Materials at Toyota Technological Institute at the assistant or associate professor level. A doctoral degree in materials or a closely related field is required. The successful candidate will have demonstrated potential to develop strong programs of materials research for information storage such as magnetic and optical recordings. Individuals with expertise in materials processing and characterization, as well as those with industrial experience and/or interests in collaborative research with industry, are especially encouraged to apply. Candidates should send by **April 30, 1997** a curriculum vitae with a list of publications, a single page summary of research projects and interests, along with the names and addresses of three references to:

Professor Takao Suzuki
Information Storage Materials
Research Laboratory
Future Industry-Oriented
Materials Division
Toyota Technological Institute
2-12-1, Hisakata, Tempaku-ku
Nagoya, 468 Japan
Tel/Fax: 81-52-809-1870/1874
e-mail: tsuzuki@toyota-ti.ac.jp

Toyota Technological Institute is an equal opportunity educational institute and equal opportunity employer.

**FACULTY POSITION
Ceramic Processing
Georgia Institute of Technology**

The School of Materials Science and Engineering at Georgia Institute of Technology seeks candidates for a tenure-track faculty position in ceramic processing. Candidates should have a PhD degree in materials science or engineering or a related field, research accomplishments in the area of ceramic processing and process modeling, a demonstrated ability to attract external funding, and documented excellence in teaching in the field of materials.

The successful candidate will be expected to teach undergraduate and graduate courses in materials and collaborate in research with other members of the faculty. Interested candidates should provide a complete curriculum vitae, a description of research interests, copies of three publications, and names and addresses of at least three references.

Applications should be sent to Dr. Miroslav Marek, Chair, Faculty Search Committee, School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA 30332-0245. The review process will start on **March 1, 1997**.

Georgia Tech is an equal opportunity employer.

Positions Available

WEBMASTER

Materials Research Society

The Webmaster for the Materials Research Society will oversee the ongoing creation and development of MRS's presence on the World Wide Web. The most important job functions of the Webmaster will be to (1) create and develop new content appropriate to electronic media and (2) coordinate the electronic dissemination of content from existing MRS publications and services, such as MRS Bulletin. The successful candidate must be highly self-motivated, capable of initiating and managing new projects, possess strong communication skills, be adept at communicating with the MRS membership, and should have a strong technical background (preferably with an advanced degree) in materials science or related fields. Editorial experience and experience with World Wide Web publishing tools are highly desirable, but not necessary, given the ability to learn. This is a permanent position, not a rotating or "fellowship" slot. Send resume and cover letter with salary requirements to:

Director of Electronic Services
Materials Research Society
9800 McKnight Road
Pittsburgh, PA 15237
or e-mail to: webmaster@mrs.org.

Affirmative Action/Equal Opportunity Employer.

FACULTY POSITIONS

**Ceramic Engineering Department
University of Missouri—Rolla**

Applications for up to two tenure-track assistant/associate professor appointments starting in the Fall Semester 1997 are invited. Applicants must have earned a PhD or D. Sci. Degree in ceramic engineering or materials science or a related field.

Responsibilities include teaching both undergraduate and graduate courses in ceramic engineering; developing a strong, independently-funded research program; directing graduate and undergraduate research; and effectively interacting with faculty, staff, and students.

Persons with expertise and interest in all ceramic materials subspecialties will be considered, but priority will be given to areas related to structural ceramics, electronic materials, crystallography, and glass structure and properties.

The deadline for applications is **April 15, 1997** but late applications will be considered until the position is filled. Applicants should submit a personal resume, a statement of their teaching and research plans, and the names of three references to:

Chair of the Search Committee
Ceramic Engineering Department
University of Missouri—Rolla
222 McNutt Hall
Rolla, MO 65409-0330

UMR is an equal opportunity, equal access, affirmative action employer.

DIRECTOR

**New York State
Center for Advanced
Ceramic Technology**

The New York State College of Ceramics at Alfred University invites applications from qualified individuals for the position of Director of the New York State Center for Advanced Ceramic Technology.

The Center for Advanced Ceramic Technology (CACT) is one of thirteen state-funded centers for advanced technology requiring matching funds from New York State (NYS) industry. The CACT, along with 50 corporate sponsors and affiliates, supports a broad-based program of graduate R&D of both traditional and high technology ceramics, as well as outreach, educational and technology transfer efforts, including short courses, training programs, special symposia and workshops. Included are regular interactions with small, medium, and large NYS companies, including solicitation for participation in all funding opportunities to achieve matching funds. The Center also interacts with the Ceramics Corridor Innovation Center's Incubator project and its start-up companies.

The Director of the CACT is the Chief Administrative Officer for the Center and reports directly to the Dean of the New York State College of Ceramics at Alfred University. The Director is also a part-time member of the faculty of the School of Ceramic Engineering and Materials Science. The Director supervises a staff of four full- and part-time employees.

A PhD degree in ceramic engineering or science, materials science, or related field with administrative experience is preferred. Individuals with an MS degree combined with extensive industrial experience will also be considered. A person is sought with exceptional vision, commitment, energy, entrepreneurialism and leadership skills, one who will enthusiastically involve faculty and administration in specifying and achieving tangible results which will provide value to NYS companies.

Following a review of the applications received, selected candidates will be invited to the campus to be interviewed by representatives of the Director's Search Committee and the Faculty Search Committee of the School of Ceramic Engineering and Materials Science.

Interested candidates are encouraged to submit their curriculum vitae along with the names of three references to:

CACT Director's Search Committee
c/o Dr. L. David Pye, Dean
New York State College of Ceramics
Alfred University
2 Pine Street, Alfred, NY 14802

Deadline for receipt of applications is **April 15, 1997**. A Fall 1997 starting date is anticipated. Minorities, women, and persons with disabilities are encouraged to apply.

The New York State College of Ceramics is an affirmative action/equal opportunity employer and complies with all applicable nondiscrimination laws, including ADA.

TENURE-TRACK POSITION

**Department of Mechanical Engineering
University of Texas at Austin**

The Department of Mechanical Engineering at The University of Texas at Austin is seeking candidates for a tenure-track, Assistant Professor position which may become available in materials science and engineering. Each candidate's research and teaching interests must lie within the following technical areas: mechanical properties of materials with emphasis on microstructural aspects of fracture processes and/or processing of structural and/or electronic materials. All candidates must possess a doctoral degree in an engineering field appropriate to the stated specialty areas (or have all degree requirements substantially complete), show evidence of competence in carrying out original research, indicate a sincere interest in teaching and in directing graduate students on research projects, be able to show evidence of employment authorization as required by the Immigration Reform and Control Act of 1986, and be available during the 1997-98 academic year. Candidates should send a resume, a list of at least three professional references, and a statement of career interests and objectives to: Chair of Mechanical Engineering, The University of Texas at Austin, ETC 5.160, Austin, TX 78712-1063. This search will remain open until positions are filled.

The University of Texas at Austin is an equal opportunity, affirmative action employer. Women and minorities are especially invited to apply.

MATERIALS SCIENTIST—INTERA, Inc.

INTERA, Inc., a wholly-owned subsidiary of Duke Engineering & Services, has a position available at its Las Vegas, NV location in the area of environmental science and engineering with a specialty in materials science and engineering and related areas. Position requires understanding of physical and chemical processes of materials (metals and ceramics) interacting with service environment, analysis and synthesis of materials testing data, and quantification of long-term behavior of materials.

MS degree plus three years or a PhD degree in materials science or related engineering discipline required. Demonstrated experience in the analysis of materials behavior in subsurface processes. Highly skilled in mathematical representations of materials behavior and related processes. Excellent oral/written communication skills essential.

Send resume to Dr. Joon H. Lee, INTERA, Inc., 1180 Town Center Drive, Las Vegas, NV 89134.

Equal opportunity employer.

Positions Available

平成10年度基礎科学特別研究員の公募について

科学技術庁傘下の特殊法人理化学研究所は、我が国の基礎研究を強力に推進するため、平成10年度の基礎科学特別研究員を募集します。斬新な研究課題を自主的に遂行できる若い研究者の応募を期待します。

採用予定人員/70名程度

受入機関/理化学研究所

募集分野/物理学、化学、生物科学、医科学、工学の各分野で、理化学研究所で実施可能な研究。

応募資格/平成10年4月1日現在35歳未満で、博士号取得者又はこれと同等の能力を有すると認められる者。

※日本国に永住権を有さない外国人にあっては、上記に加え、次の条件を満たす者。

①応募日現在日本国に在住している者。

②日本国の大学院博士課程を終了(見込を含む)し、博士号を取得(見込を含む)の者。

待遇等/①謝金 月額50万円程度(社会保険、税込)

②通勤費 実費(上限40千円/月)

③住宅費 家賃の一部支給

④研究費(1,380千円/年程度)

着任時期/平成10(1998)年4月1日

契約期間/連続して最長3年間を限度とし、毎年度所要の評価により契約更新

応募要項領布/領布開始は4月上旬予定

応募要項の請求は、下記FAXへ①郵便番号②住所③氏名(漢字)④氏名(カタカナ)を記入し、送信すること。 ※要項代は無料です。

応募願書の提出締切/平成9年5月30日(金)必着

提出先

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理化学研究所

To place your ad, call Mary E. Kaufold today!

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SCIENTIFIC MEMBER AND DIRECTOR
Max-Planck-Institut für Metallforschung
Stuttgart, Germany

Applications are invited for the position of a scientific member and director at the Max-Planck-Institut für Metallforschung. We seek applicants with expertise in the field of theory of mesoscopic phenomena in materials.

The candidate must have a distinguished academic record and an active interest in interdisciplinary research. He/she will head a research division which should focus on the theoretical aspects of macroscopic properties of complex materials systems in relation to their microstructure. Depending on the background of the candidate, structural (mechanical) properties and/or functional (electric, ferroelectric, magnetic) properties should be emphasized.

Interested applicants should submit a resume complete with CV, research areas, list of publications, and reprints of their five major publications to the Executive Director of the Institute, Prof. Dr. Manfred Rühle, Max-Planck-Institut für Metallforschung, Seestrasse 92, D-70174 Stuttgart, at their earliest convenience but no later than **March 31, 1997**.

Services

PATENT ATTORNEY

Richard A. Neifeld, PhD

Arlington, VA

Telephone: 703-412-6492; Fax: 703-413-2220

e-mail: raneif@oblon.com

Oblon, Spivak, McClelland, Maier & Neustadt, P.C.

POSTERMINARIES

GRANDIOSE UNIFICATION

Theorem: Applying the rational, logical thought processes of science to society, indeed to civilization itself, inevitably, leads to useless, superficial results. *Axiom 1:* Recasting trivially obvious observations ultimately leads only to pronouncements of trivia. *Axiom 2:* Gross generalization inevitably leads to zero utility. *Corollary:* In order for science to explain phenomena, and test its own hypotheses, it makes many simplifying, idealizing assumptions about the system under study. *QED.* Let's try anyway! How would we go about constructing an equation of state (EOS) for the whole shebang?

Start with time t (plenty of it) and spherical spatial coordinates $r = \theta, \phi$ on which to frame the problem.¹ A basic function that will enter all interesting evaluations is the instantaneous time- and position-dependent population density on the planet, $\mathcal{N}(t, \mathbf{r})$, in number of people per square meter.² We know \mathcal{N} is actually the

culmination of millennia of evolution and should properly be written as $\mathcal{N}(t, \mathbf{r}) = \int_{t_0}^t \mathcal{B}(t, t', \mathbf{r}, \mathbf{r}') \mathcal{N}(t', \mathbf{r}') dt' d\mathbf{r}'$, taken over all space, where \mathcal{B} is the evolution operator³ and $t = t_0$ is an adjustable cutoff parameter lying in the range $-5000 \text{ BC} \geq t_0 \geq -50,000 \text{ BC}$.⁴ Naturally, $\mathcal{N} = \sum_i \mathcal{N}_i$ and $\mathcal{B} = \sum_{ij} \mathcal{B}_{ij}$, where i, j run through every national, religious, racial, and gender grouping one can think of. Clearly the $i \neq j$ cross terms in \mathcal{B} are crucial to getting the problem right and are not to be found in even the best almanacs.

A second basic set of functions, $\mathcal{R}(t, \mathbf{r}) = \sum_i \mathcal{R}_i(t, \mathbf{r})$, describes the disposition of the rest of the global environmental resources (i.e., anything but people) where i runs through such things as animal life, biota, climate, desert, fossil fuels, arable land, minerals, pollutants, bodies of water, etc. Each \mathcal{R}_i naturally has many of its own subcategories. The evolution of any of these environmental factors is the sum of a self-evolution term and a human-inter-

action term. The eruption of Mount St. Helens is an example of the former and the near extinction of the American buffalo, the latter.

Lastly, we must define the output functions that we want to compute with some predictive ($t > \text{now}$) power. Every conceivable phenomenon of interest can be defined in the same frame. E.g., concentration of wealth $\mathcal{W}(t, \mathbf{r})$ in ecu/m²s, illness rates $\mathcal{S}(t, \mathbf{r})$ in (morbidity + mortality)/m²s, conflict intensity $\mathcal{G}(t, \mathbf{r})$ in combatants/m²s, and so forth. These will all be encompassed by the ultimate EOS.⁵ How do we proceed? So far, all we have done is define stuff. The two substantive challenges are (1) finding methods for construction of evolution operators from a knowledge of the forces that drive evolution and (2) identifying those forces.

Challenge (1) is a mathematician's dream and is beyond the scope of POSTERMINARIES. Suffice it to say that the