

Positions Available

**X-RAY DIFFRACTION AND SCATTERING
ASSOCIATE DEVELOPMENT ENGINEER (APS-5)**

The University of California at Santa Barbara invites applications for an associate development engineer (APS-5) in the X-ray Facility of the Materials Research Laboratory. Responsibilities include hands-on operation and maintenance of x-ray machines and diffractometers, specifically CAD4 and Scintag machines; establishing, maintaining, and monitoring health and safety policies and procedures; overseeing software development and implementing with instrument training for undergraduate and graduate students and postdoctoral research staff.

Current research spans a broad range of scientific and technological programs, among which are structure determination of novel new zeolites, phase behavior characterization of biomolecular materials, nonequilibrium studies of flowing complex fluids, and surface and internal structure studies of oxide and semiconductor thin films. Preference will be given to candidates with a PhD in physics, chemistry, or materials science and those with the demonstrated experience in (1) hands-on operation and maintenance of x-ray machines and diffractometers, and (2) successful collaborative research records. Candidates should have a strong background in electronics, mechanical skills, and computer programming (UNIX in particular).

Interested persons should apply to position 93-05-022 SC (include resume, statement of interest, copies of publications, names and addresses of references) to: Personnel Office, University of California, Santa Barbara, South Hall, Room 3607, Santa Barbara, CA 93106. Please apply prior to **October 15, 1993** for initial consideration; position is open until filled.

The University of California is an Equal Opportunity/Affirmative Action Employer

**POSTDOCTORAL POSITION(S)
Princeton Materials Institute
Princeton University**

Available immediately; thermochemistry of synthetic zeolites. Anticipated thermochemistry of high oxidation state perovskites, including oxide fuel cell materials; also glass-ceramics and high-pressure phases. Background in solid-state chemistry, ceramics, mineral physics; experience in crystallography, thermodynamics, and high temperature experimentation. Contact Prof. A. Navrotsky, Dept. of Geological and Geophysical Sciences, Princeton University, Princeton, NJ 08544. Phone: (609) 258-4674; fax: (609) 258-1274.

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

CHAIRMAN

Department of Manufacturing Engineering

Boston University's College of Engineering invites applications and nominations for the position of Chairman, Department of Manufacturing Engineering. We anticipate a tenured faculty appointment at the rank of Professor for a prominent researcher with excellent leadership skills, administrative experience, and interest in education.

In recent years Boston University has invested over \$110 million in new science and engineering facilities, and has significantly enhanced the scope and prominence of research and graduate programs in engineering while maintaining the strength of our undergraduate programs. The Department of Manufacturing Engineering now consists of 15 full-time faculty. Established research programs include *Dynamic Scheduling and Planning of Manufacturing Systems*; *Materials for Manufacturing and Process Control*; *Robotics, Control and Flexible Automation*; and *Manufacturing Design including CAD, CAM and CIM*. Collaborations with other University departments and centers with facilities such as the Connection Machine, as well as with private industry, contribute to the research and educational goals of the Department. The size of the senior class has increased recently to 50, with an equal number of full-time-equivalent master's students, and a growing cohort of 20 doctoral candidates. The department was the first to be granted ABET accreditation, and its B.S. program has been consistently ranked as one of the top two programs in the country.

The new Chairman will be expected to provide academic and administrative leadership in a period of continued departmental growth and development, while pursuing a significant research program of his or her own. Considerable resources and infrastructure have been and will be put in place to help make this a realistic expectation for an outstanding candidate.

Direct applicants should send a letter of interest, a curriculum vitae, and the names of three references. Indirect nominations should include information about the prospective candidate, and the nominee's vitae if possible. Full review of applications will begin November 15, 1993. All correspondence should be addressed to: Professor Theodore D. Moustakas, Chairman, Manufacturing Search Committee, Boston University, 44 Cummington Street, Boston, MA 02215.



COLLEGE OF ENGINEERING

*An equal opportunity,
affirmative action institution*

REMINDER:

Deadline for 1994 Spring Meeting abstracts is November 1, 1993.

Mail abstracts to:

Materials Research Society • 9800 McKnight Road • Pittsburgh, PA 15237

Research

**PROGRAM
OFFICER**

Materials Policy Study

The National Research Council is seeking a Program Officer for its National Materials Advisory Board. Responsibilities include direction of technical studies for use by government agencies in formulating policies and programs related to materials science and engineering. Requires a Master's or equivalent in materials science and engineering, or a related field, at least 4 to 5 years related experience preferably in advanced ceramic materials, photonic materials, or electronic materials. Some familiarity with the materials communities in industry, government, and university is desirable, as well as knowledge of policy issues in materials science and engineering, and knowledge of government agencies and their work in materials related issues preferred. Excellent verbal, written, and management skills also required. Please send resume in confidence to: CETS/NMAB (306.103)/RS, National Research Council, 2101 Constitution Ave., NW, Washington, DC 20418. EOE.



Ad closing for the
November MRS Bulletin is
October 1, 1993.

To place your ad, call
Mary E. Kaufold at
(412) 367-3036 today!

Positions Wanted

The following advertisements are from MRS members seeking employment in materials research and development.

Prospective Employers—
To correspond confidentially with the applicant, REPLY TO THE APPROPRIATE BOX NUMBER, AS FOLLOWS:

Box _____, No. _____
c/o MRS Bulletin
Materials Research Society
9800 McKnight Road
Pittsburgh, PA 15237

Successful R&D investigator with PhD in materials science. Seeking creative position in a stable environment. Strengths are in materials development, synthesis, and characterization. Do synthesis of film, bulk and powder materials, powder processing, CVD, spectroscopy (optical and electron), microscopy (optical, SEM, STEM, AFM), surface science; build labs. Worked extensively with glass, ceramics, cermets, composites and superhard. **Employers** — Please reply to **Box No. XVIII, No. 901.**

PhD (1991 in Materials Science) seeks challenging and continuing R&D position involving thin-film growth. Background in photovoltaics, electroluminescence, and chemical sensors. Experience with: II-VI compounds and binary and ternary metal oxides grown by PVD, CVD, electrodeposition and pulsed laser ablation; characterization by RBS, Auger, XPS, SEM, XRD, and optical methods. **Employers** — Please reply to **Box. No. XVIII, No. 902.**

Mineralogist, PhD in science. Seeking a position in R&D. Work experience in thermal and mechanical properties of oxide and silicate ceramics, thermal coatings, high temperature x-ray diffractometry, strengthening of ceramics, micro-hardness and characterization of ceramics. Fluent German and English. **Employers** — Please reply to **Box No. XVIII, No. 903.**

Research/engineer position in industry or academia in the area of surface and interface, thin films, catalysis, materials processing and characterization, and synchrotron radiation-based instrumentation and experimentation. PhD in materials science, MS in physical chemistry, BS in physics. Strong background and technical skills in UHV techniques, FTIR, MS, ESCA, AES, and x-ray microscopy and spectroscopy. **Employers** — Please reply to **Box No. XVIII, No. 904.**

Current MRS Members are eligible for one (1) free "Position Wanted" classified ad per year in the MRS Bulletin. Ad length: up to 50 words; one-time insertion. Ad must be reserved no later than the 1st of the month prior to the month of publication. (For example, to place an ad in the January issue, space must be reserved by December 1.) For information, contact Mary E. Kaufold, MRS Bulletin Advertising, 9800 McKnight Rd., Pittsburgh, PA 15237; (412) 367-3036.

MRS BULLETIN/SEPTEMBER 1993

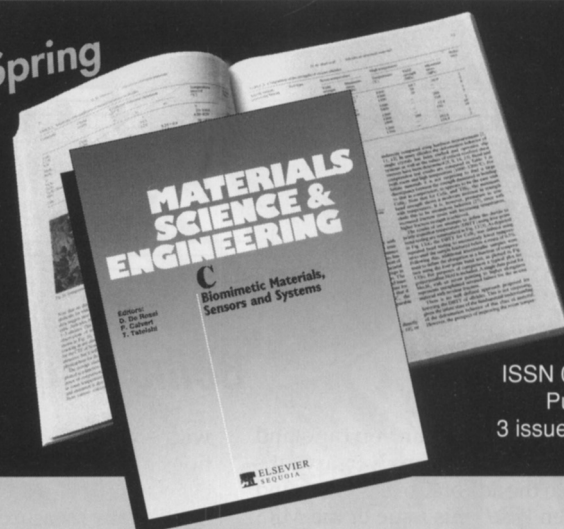
MATERIALS SCIENCE & ENGINEERING

C

Biomimetic Materials, Sensors and Systems

CALL FOR PAPERS

New in Spring
1993



ISSN 0928-4931
Published in
3 issues per year

EDITORS

P. Calvert
Tucson, AZ, USA

D. De Rossi
Pisa, Italy

T. Tateishi
Tsukuba, Japan

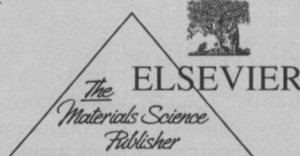
For scientists and engineers with an interest in the respective interfaces of biology / biotechnology and materials and structures, information processes, sensors and actuators, robotics

This international and interdisciplinary journal reports on scientific and technical contributions dealing with all aspects of conceiving, designing, constructing and testing man-made materials, structures, devices and systems which replicate or are based on biological entities and processes. These include, but are not limited to:

- Materials and Structures
- Sensors and Information Processes
- Dynamics and Control Systems

ELSEVIER
SEQUOIA

PO Box 564
CH-1001 Lausanne
Switzerland
Tel.: +41 (21) 320 73 81
Fax: +41 (21) 323 25 45



For customers in
the USA and Canada:
**Elsevier Science
Publishing Co., Inc.**
Journal Information Center
655 Avenue of the Americas
New York, NY 10010, USA
Tel.: +1 (212) 633-3750
Fax: +1 (212) 633-3764

Please send me a free sample copy and subscription information on
MATERIALS SCIENCE & ENGINEERING C

Name: _____
Company/Institute: _____
Street: _____ City: _____
Country: _____ Postal Code: _____
Date: _____ Signature: _____

Circle No. 17 on Reader Service Card.

MSC/mrs9309

Symposium Aide Opportunities

Graduate students who plan to attend the 1993 Fall Meeting and are willing to assist in the symposium presentations by operating audio-visual equipment are encouraged to apply for a Symposium Aide position. MRS will pay the 1993 Fall Meeting student registration fee—plus a small stipend toward expenses—for symposium aides who work a minimum of four full half-day sessions. To request an application form and/or information, please contact Jane Stokes at MRS Headquarters:

Phone (412) 367-3003 • Fax (412) 367-4373.

POSTERMINARIES



Being Odd: Getting Even

If you've read more than you can stand about MRS's twentieth anniversary, it's time to skip to the ads on Covers Three and Four and then "file" this issue of the *MRS Bulletin* with its predecessors. But if you have the stomach for a last anniversary gasp, read on. Let's mine the real kernels of wisdom from the sage words of all the former MRS presidents which have appeared in recent issues and from the extended coverage in this issue as well. The obvious, blatant, and sweeping generalization is simply that practitioners of real relevant materials research (as opposed to departmental materials science and engineering) found themselves to be "odd men [sic] out" in the disciplinary societies and on the ledgers of disciplinary divisions of funding agencies in the 1960s. The desire to gain parity with traditional forms and forums, to "level the playing field" (borrowing a cliché from the lexicon of international trade), was predictably irresistible. They did not resist.

Perhaps "odd" is too tame a descriptor for a ragtag assemblage of disciplinary misfits—physicists who liked chemistry, chemists who liked metallurgy, uncivil mechanical engineers, and malleable ceramists who liked science. Heretics all! Is it any wonder that the normally forward-looking, flexible, imaginative federal agencies took a "wait-and-see" attitude toward proposals proffered by the likes of these groundbreaking crackpots? Think about it. University professors discovering the "relevance thing" in the midst of the "golden age" of pure science funding. Not the pseudo-relevance, spin-off thing we associate today

with elementary particles and the delegations of Texas and Tennessee*, but the relevance *vérité* of materials. Wow!

By many measures, we all, i.e., the original and the recent lunatics alike, have pulled even and even passed the single disciplines to the point where our algorithms are imitated. (Remember! Imitation is tantamount to flattery from those who can't think of a better original idea.) But an anniversary is not only an occasion to reflect on our accomplishments. It is also, as Rustum Roy reminds us in this issue, an opportunity to rededicate ourselves to continued pursuit of our initial goals of odd-ball interdisciplinarity.

Force Feeding Fissiparousness

Roy boasts in one of his articles that materials research and, we therefore presume, the advent of MRS which we now celebrate, stopped and reversed the fissiparous paradigm of western science. In another article, he laments the relatively small numbers of MRS meeting participants that Symposium X attracts—to our mind a symptom of topical rather than subdisciplinary fissiparousness. We propose two remedies. The first is huge discounts on registration fees for meeting participants who attend all Symposium X sessions plus at least one other invited talk per day on a subject they care nothing about. The second is free subscriptions and no page charges in the *Journal of Materials Research* for authors whose papers span at least two top-

*States chosen only for purposes of alliteration, of course.

ics and three disciplines and who intelligently include at least five literature citations to works from other fields. This should rehabilitate the interdisciplinary iconoclast in all of us and help MRS stave off pernicious attempts to topically "divisionalize" the Society for another twenty years.

Numerology

In the spirit of breaking with disciplines of the past, we question anniversaries, *per se*. Why is survival for an integral number of years a figure of merit? And why twenty years? The unimaginative would argue that we are inherently decimal beings in solar orbit, and there you have it. Phooey! Why not celebrate MRS's 250th "luniversity" next February, if we must be decimal and astronomical. The psychological roundness of numbers is numbing and limits our possibilities. Those who have experienced the exhilaration of reheating coffee for 37 seconds in a microwave oven know precisely what we mean. We shall save our discourse on the simultaneous roundness of traffic speed limits in both British and metric units and on other extraneous matters for another issue, as the subject goes far beyond anniversaries. Therefore, to paraphrase our most eloquent and distinguished legislators, who are also all experts in numerology, we yield back the balance of our space.

E.N. KAUFMANN

Note: The above musical phrase introduces "The Anniversary Waltz," words and music by Al Dubin and Dave Franklin, ©1941, Mayfair Music Corp. □