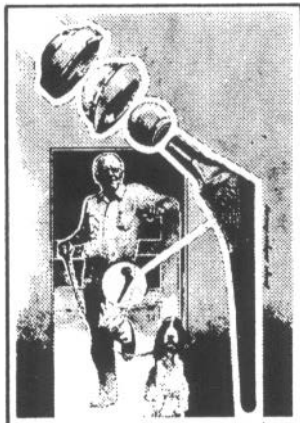


Positions Available

STATE-OF-THE-ART TECHNOLOGY



**We Take Pride In
What We Do...And It Shows**

Osteonics develops and produces technologically impressive orthopaedic implant devices and instrumentation. Here, people take pride in their work and it shows in the quality of our products and the quality of life these products allow.

**MATERIAL RESEARCH
ENGINEER**

You will perform mechanical testing and characterization of biomaterials concentrating on refractory based superalloys and stainless steel; assist in the development of surface enhancements; and document physio-mechanical test results in R&D tech reports.

To qualify, you should have a BS or MS in Materials Science or Metallurgy; 3-5 years experience in the processing and phase distribution of titanium and cobalt based superalloys and knowledge of the mechanism of steel hardening and corrosion resistance are preferred. Familiarity with mechanical test equipment is a plus.

In addition to a warm family atmosphere, Osteonics provides an excellent salary and a wide range of company paid benefits including comprehensive medical, dental and life insurance plans, company matched 401(K) savings program and tuition reimbursement.

Please send resume and salary requirements to: Employment Manager, Dept. M-5MR, Osteonics, 59 Route 17, Allendale, NJ 07401-1677. An equal opportunity employer m/f/h/v. No agencies please.

OSTEONICS
THE SCIENCE OF BETTER FIT
A Subsidiary of Steptec Corp.

**FACULTY POSITION
Materials Department
University of California, Santa Barbara**

The Department of Materials at the University of California, Santa Barbara invites applications for a tenure-track faculty position available October 1, 1992 in the area of the use, application, and development of computer modeling and simulation in materials science and engineering. The Materials Department has a multidisciplinary focus on such areas as electronic materials, macromolecules, structural composites, and materials processing. Applicants should have a desire to pursue interdisciplinary research within the framework of the Department and in the context of a College of Engineering initiative in numerical simulation. Individuals are encouraged to apply who have interests in such areas as: electron structure calculation, molecular and polymer dynamics; simulation of interface and surface properties and growth; modeling of phase transformations; simulation of deformation processing; and modeling of mechanical properties of advanced composites.

Responsibilities include teaching both undergraduate and graduate courses and developing a strong research program. A PhD or an equivalent degree and evidence of excellent teaching and research are required. Senior-level appointments with tenure can be made based on an outstanding record of research. Joint appointments with other Departments at UCSB are possible.

To ensure full consideration, applications should be received by the Department by **June 1, 1992**. Candidates should send a resume containing teaching and research accomplishments and the names of at least three references to:

Prof. David R. Clarke
Department of Materials
University of California
Santa Barbara, CA 93106

Proof of U.S. citizenship or eligibility for U.S. employment will be required prior to employment (Immigration Reform and Control Act of 1986).

**THIN FILM MATERIALS
University of California, Berkeley
Department of Materials
Science & Mineral Engineering**

The University of California at Berkeley, Department of Materials Science & Mineral Engineering, invites applicants for a tenure-track position in thin film materials with expertise in the control of microstructure during thin film synthesis and processing. Preference will be given to an appointment at the assistant professor level, although appointment at a tenured level will be considered for an exceptionally qualified and experienced candidate.

The successful candidate will be responsible for teaching undergraduate and graduate courses in the Department, and must show potential for high quality research. A doctoral degree in an appropriate field is required. The position is available in the Spring Semester of 1993.

Interested persons should apply (include resume, statement of interest, copies of publications, names and addresses of references) by **July 1, 1992** to:

Prof. Ronald Gronsky, Chairman
Department of Materials Science & Mineral Engineering
210 Hearst Memorial Mining Building
University of California
Berkeley, California 94720
Phone: (510) 642-3801

The University of California is an Equal Opportunity, Affirmative Action Employer.

Research Associate to conduct research on statistical microstructure changes during fatigue of various engineering materials and to develop life prediction models using obtained experimental data. Requirements: PhD in materials science and engineering; research experience in microstructural characterization and mechanical behavior of engineering materials; hands-on experience in transmission electron microscopy, scanning electron microscopy, x-ray diffraction, EDX and metallography; demonstrated ability in modeling of mechanical behavior of engineering materials using experimental data; experience in computer programming using C and FORTRAN; working knowledge of fracture mechanics, quantitative analysis, computer interface and computer graphics. \$31,200 per year. Job location/interview: Los Angeles, CA. Send this ad and resume to: Job #DN 8389, P.O. Box 9560, Sacramento, California 95823-0560, no later than **June 15, 1992**.

POSTDOCTORAL CANDIDATES

The Ceramic Science and Technology Group (MST-4) at the Los Alamos National Laboratory seeks postdoctoral candidates in the general areas of sol gel processing science, pre-ceramic polymer systems, tape casting rheology, bulk single crystal synthesis, ceramic composites development, chemical sensor research, active ceramic systems, spray pyrolysis, the theory of machining and grinding, electrical properties and radiation damage, crystal defect structures, materials characterization and microwave processing.

Current Programs

- Ceramic and Silicides Matrix Composites Development
- Ceramics for Metals Re-Processing and Waste Remediation
- Composites Interface Research
- Functionally Gradient Materials
- High Temperature Superconductors
- In-Situ Surface Modification
- Microwave-Material Interactions
- Novel Powder Synthesis Techniques
- Radiation Effects
- Ultra-High Temperature Oxide Systems

MST-4 possesses state-of-the-art thermophysical properties instrumentation and extensive powder characterization and ceramic processing equipment. In addition, we have access to other world class Los Alamos research facilities and scientists within the Materials Science and Technology Division, the Center for Materials Science, the Superconducting Technology Center, the Advanced Computing Laboratory, and the future Materials Science Laboratory (to be completed Spring '93). Finally, Los Alamos is an active participant in the University of New Mexico Center for Micro-Engineered Ceramics.

Qualifications

Recent Ph.D. in Ceramic Science, Materials Science, Metallurgy, Chemistry, Chemical Engineering, Physics or related area with excellent academic credentials and strong publication record.

Benefits

- Annual starting salary of \$38,133-\$40,164. Exceptionally well-qualified candidates will be considered for the prestigious J. Robert Oppenheimer fellowship at \$60,000 per year or the U.S. Department of Energy fellowship at \$52,800 per year.
- Liberal fringe benefits.
- Opportunity to be associated with one of the world's foremost scientific research and development laboratories.

The Los Alamos National Laboratory is located in the beautiful mountains of northern New Mexico, which provides exceptional recreational activities including skiing, whitewater rafting, backpacking and mountain climbing.

For initial consideration, interested candidates should mail or fax a copy of their resume and three letters of reference to Dr. Frank D. Gac, Group Leader, MST-4, MS G771, Los Alamos National Laboratory, Los Alamos, NM 87545, fax (505) 665-3363.

To formally apply, send resume, employment application, three letters of reference and graduate and undergraduate transcripts to Mary Anne With (MS P280), Human Resources Development Division PD-92-101, Los Alamos National Laboratory, Los Alamos, NM 87545.

Affirmative Action/Equal Opportunity Employer. Must be able to obtain a Department of Energy Security Clearance, which normally requires U.S. citizenship.

Los Alamos
NATIONAL LABORATORY

Microelectronics and
Materials Technology Centre

Professor/Director

Salary Range:
\$A73,800 (\$A77,900 after July 1992)

Applications are invited for the position of Professor and Director of the Microelectronics and Materials Technology Centre (MMTC) which is the largest research centre at RMIT.

The Centre has major research activities in the areas of semiconductor device processing, electronic materials and near surface processing of non-semiconductors. Near surface processing and characterisation, especially involving ion beams, are major thrusts of the Centre. Major application areas are: optoelectronic devices, sensors and treating engineering components.

The successful applicant will be required to manage the staff, budget and operations of the Centre, provide professional and academic leadership and liaise with internal and external research groups/institutions in developing strategies for future programs and securing external funding.

Applicants must possess a PhD with a strong research background in microelectronics or materials processing of relevance to the Centre's research activities. Preference will be given to applicants with an industrial microelectronics and sensor background or substantial experience in directing microelectronics or materials activities.

Experience in management and administration of a research and development team will also be an advantage.

Applicants will need to satisfy the RMIT professorial criteria in each of the three areas of Research and Scholarship; Teaching and Communication; leadership professional and academic.

For further information contact Professor W. Carroll, Dean - Faculty of Engineering Phone 613 660 2523 or Professor J. Williams - Special Research Centre Director, Phone 61 62 49 0020.

A position description may be obtained from Human Resources Management Group, by phoning 613 660 4600 or fax 613 663 4453. Applications in writing and quoting reference number 184-05-A should be addressed to the Senior Appointments Officer by Monday 1 June, 1992.

A merger between RMIT and Phillip Institute of Technology is expected to take effect from July, 1992.

Equal opportunity is university policy
Royal Melbourne Institute
of Technology Limited,
GPO Box 2476V, Melbourne,
Vic. 3001 Australia
ACN 004 053 703

27910

RMIT

Positions Available

Materials Scientist/Physicist



Research Position

\$41K - \$56K + Superannuation
Division of Forest Products,
Clayton, Victoria, Australia.

The Division of Forest Products has recently joined with Monash and Melbourne Universities and the Pulp and Paper Manufacturers Federation of Australia to establish a Cooperative Research Centre for Hardwood Fibre and Paper Science. This Centre with an annual budget of around \$5 million, will be working to improve the quality of Australian hardwood plantations through the application of fibre science.

We are now seeking an enthusiastic and committed scientist to participate in the work of the Centre and to become a versatile and innovative member of a strong multi-disciplinary team.

Your principle aim will be to determine the influence of hardwood and softwood fibre properties on paper structure and qualities, and then devise strategies to control them. Currently, the team is involved in the development of automated X-ray scanning microdensitometry, microscopy, image analysis, fibre length distribution analysis and spectroscopy.

We are looking for a person with several years experience in materials science or a relevant field, sound communication skills, and mathematical and computing experience.

Dr Geoffrey Gartside, phone 61 3 542 2209 can provide further details of the position. A selection criteria and duty statement may be obtained from Ms Maria Germano 61 3 542 2217. Both may be contacted by facsimile 61 3 543 6613.

Please forward your application with details of skills, qualifications, work achievements and the names of at least two referees to:- **The Personnel Officer, CSIRO, Division of Forest Products, Private Bag 10, Clayton, Victoria 3168, Australia by 22nd May, 1992.**



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 EQUAL OPPORTUNITY EMPLOYER

28029

FACULTY POSITIONS
Cornell University

The Department of Materials Science and Engineering at Cornell University invites applications for two faculty positions in materials science and engineering.

Senior Faculty Position

This position will become available January 1, 1993. An ability to develop an exceptional teaching and research program is required. We have a strong preference for candidates with research interests in electronic materials, but distinguished candidates in all fields of materials science will be considered.

If interested, please send a brief one page letter outlining your research and teaching interests before **June 30, 1992** to:

Chairperson, Senior Faculty Search Committee
 Materials Science and Engineering
 214 Bard Hall
 Cornell University
 Ithaca, NY 14853-1501

Tenure-Track Junior Faculty Position

This position is subject to funding availability. Applicants should have a deep commitment to teaching and a strong record of research in one of the following areas: ceramics, electronic materials, metals, or optical materials. It is desirable that the research effort of the candidate benefits from the current experimental capabilities within the department, which include extensive electron microscopy facilities. Candidates should send a curriculum vitae along with a one page statement outlining research and teaching plans before **June 30, 1992** to:

Chairperson, Junior Faculty Search Committee
 Materials Science and Engineering
 214 Bard Hall
 Cornell University
 Ithaca, NY 14853-1501

Cornell University is an Affirmative Action/Equal Opportunity Employer and Educator.

POSTDOCTORAL POSITIONS
Princeton University

Postdoctoral positions available in mid-1992 in solid state chemistry, mineral physics, and glass science. Calorimetric and structural studies of phase transitions, solid solutions, superconductors, order-disorder, glasses, and melts at high temperature. Degree in geology, chemistry, physics, or materials science, experience in high temperature science, thermodynamics, and/or crystal chemistry. Send letter of inquiry, CV and names of three references to: A. Navrotsky, Department of Geological and Geophysical Sciences, Princeton University, Princeton, New Jersey 08544 (609 258-4674).

Princeton University is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITION
Mechanical Engineering Department
Stanford University

The Thermosciences Division of the Department of Mechanical Engineering seeks applicants for a tenure-track appointment at the level of assistant or associate professor. Must have promise of excellence in teaching and research; candidate research specializations include plasma science, materials processing, combustion/propulsion, optical science and other areas compatible with thermosciences programs. Send resume and names of three references to: Prof. Ronald K. Hanson, Department of Mechanical Engineering, Stanford University, Stanford, CA 94305.

Stanford University is an Equal Opportunity/Affirmative Action employer.

Advertising Contact
Mary E. Kaufold
MRS BULLETIN

Materials Research Society
 9800 McKnight Road
 Pittsburgh, PA 15237

Telephone: (412) 367-3036
FAX: (412) 367-4373

Positions Available

FACULTY POSITION
University of Dayton

Electro-Optics Program at the University of Dayton, administered by its School of Engineering, is seeking applicants for a tenure-track faculty position at either assistant or associate professor level. The position is expected to be filled by January 1993. The successful candidate will teach graduate electro-optics lecture and laboratory courses, pursue vigorous research programs in optical materials, supervise/advise graduate students, and attract external funding. We seek an outstanding experimentalist with an earned PhD in optics, or material science/engineering, or related fields. Applications from women and minorities are especially welcome. Applicants should send a curriculum vitae, a statement of research interests, and three letters of recommendation to: Dr. Mohammad A. Karim, Center for Electro-Optics, University of Dayton, Dayton, Ohio 45469-0227 by **July 31, 1992**.

ENDOWED CHAIR IN SOLID STATE ELECTRONICS
Rensselaer Polytechnic Institute

Rensselaer Polytechnic Institute is soliciting applications and nominations for a newly endowed Roberts' Chair in Solid State Electronics. The endowed Chair is a commitment from Rensselaer alumnus and co-founder of Fairchild Semiconductor, C. Sheldon Roberts, and his wife, Pat. The Chairholder should be internationally known and be capable of providing scientific and technological leadership in microelectronics. Research emphasis can include semiconductor and packaging materials and processing, solid state devices, electronic/photon systems, modeling and characterization.

The Chairholder must qualify as a professor in the Electrical, Computer and Systems Engineering (ECSE) Department and be a strong contributor to the interdisciplinary Center for Integrated Electronics (CIE) at Rensselaer. The ECSE Department has over 40 faculty members with major strengths in the areas of solid state/integrated electronics, automatic controls/robotics, communications and information processing, computer engineering and fusion plasmas. The CIE has a broad-based research focus in interconnections and interfaces, including silicon and compound semiconductor devices and interfaces, multilevel metallization and interlayer dielectrics, thin-film packaging and high-performance digital and analog design. Both the ECSE Department and the CIE are major components of a Rensselaer strategic focus in the area of manufacturing, materials and design. Applications, nominations and inquiries should be addressed to: Prof. Ronald J. Gutmann, Director of the CIE and Professor of ECSE, Rensselaer Polytechnic Institute, Troy, New York 12180-3590 or by electronic mail to rgutmann@unix.cie.rpi.edu.

Rensselaer is an affirmative action/equal opportunity employer.

POSTERMINARIES

A Postterminaries in Three Movements

A premise: The R&D enterprise is sick. The symptoms presented by the patient must be examined, a diagnosis must be arrived at, and a treatment must be prescribed before the patient expires. In January, we tackled elucidation of symptoms and their interrelationships. In March, we charitably diagnosed the root cause as sensory deprivation. Now it's time to design a treatment and hazard a prognosis. We had warned not to expect a miracle cure. Reports on the patient's condition may be sent to the Bulletin as Letters to the Editor.

III. Taking the Collective Cure An Edifice Complex

Suppose the ventilation system of the building where you work is spreading malevolent microbes. You fall ill, consult your physician, take the miracle drug of the day, and you're cured. Right? Wrong! *Prognosis:* (1) you'll be re-infected, and (2) your work will be hurt directly or indirectly by the absence of similarly ill colleagues. *Moral:* the most successful episodic individual treatment will fail unless the entire complex takes the cure.

Our "building" is the R&D edifice. The narrowly targeted episodic treatments have been such therapies as massive injections of pork and the rhetoric of breakthrough-sculpted hyperbole plastered on each incremental advance. Roy¹ writes that it is "...a sign of the state of modern science that the advertising that now accompanies even minor (occasionally even trivial) 'discoveries' gets louder and shriller with time. It seems as though academic scientists believe that science must appear to advance only by 'breakthroughs,' artificial if not real, to retain the allegiance of an increasingly skeptical public. ...Unfortunately, agencies and managers even a little distance removed from the field get all caught up in the 'excitement.' "

Recognizing the folly in our hype, Koshland² confesses tongue-in-cheek to repeatedly protesting that science needs more funding and that the benefits of science far outweigh the deleterious side effects. He blames his need to harp on the issue on "the politicians, the bureaucrats,

and others who do not instantly see the wisdom of [his] words." Koshland earlier postulated³ that the more unlikely a project, the greater the need for a public relations expert. These treatments are worse than the disease. *Prognosis:* we will catch it again!

To recount additional misguided remedies accomplishes little. To reverse an epidemic we would need to prescribe some truly hackneyed cliches such as a paradigm shift or a sea change.

Intrinsic Aversions

Some doubt that rehabilitation in concert is feasible. Park⁴ points out that trying to get physicists to agree to anything can be compared to herding cats. I dare say most of us are "physicists" in this respect, particularly when it comes to being herded onto unfamiliar ground.⁵

Unfamiliar are the political and commercial grounds. To become entrained in the political process has run counter to our nature. Bromley⁶ realizes that scientists and engineers in the United States