ature; it is more for workers in adjacent fields and postgraduate students than for specialist researchers. Inevitably, any work of this sort will attract criticism for not going far enough in some area or not covering certain topics; so here's our ha'porth(!). The individual chapters on the glass types contain details on their optical, mechanical, and electrical properties. Unfortunately, instead of pulling these together, the three subsequent chapters on properties limit themselves to a narrow spread of materials (optical glasses, oxide glasses, and semiconducting glasses, respectively). Thus, an opportunity for some valuable syntheses across the field has been foregone.

Volume 14—Medical and Dental Materials

Edited by D.F. Williams
(VCH Publishers, 1991, 469 pages).
ISBN: 0-89573-801-5

This collection of review papers provides a useful and welcome introduction to selected aspects of medical and dental materials. Chapter 1 is an excellent review based on classifications for biomaterials in relation to their functional requirements, susceptibility to degradation, and the host response and its mediators. The following four chapters (Chapters 2 through 5) are devoted to synthetic materials in uses as diverse as joint replacements (excellent on metal components), artificial organs (somewhat cursory), and tissue healing (fascinating). Chapters 6, 7, and 13 consider materials for use in dentistry, ranging from restorative materials to false teeth. There was some overlap here, but all presented good overviews of current research. The diversity of biomaterials topics was further demonstrated by well-written chapters on the bioengineering of implantable sensors and electrodes (Chapters 9 and 10), drug delivery systems (Chapter 11), and ophthalmology (12).

Biomaterials is a subject that encompasses a diversity of disciplines. Consequently, it will always be a problem to produce a volume satisfactorily reflecting the field. Inevitably, then, this volume can be criticized as a rather *ad hoc* collection of review papers. On the other hand, it does give a useful introduction to some important developments for those who are not knowledgeable in the field; here the informed browser found access fairly straightforward and the effort very rewarding. Perhaps, as with Volume 7 on steels, this occurs because the materials science developed is limited to that needed to support the essentially technological considerations that the volume addresses. Having said that, in places—particularly Chapter 8 on models of adhesion and surface analysis—the scientific underpinning was rather skimpy.

Volume 15—Processing of Metals and Alloys

Edited by R.W. Cahn
(VCH Publishers, 1991, 628 pages).
ISBN: 0-89573-802-3

Although the title of this volume implies a rather wide coverage, its scope is limited because, along with most modern materials science and engineering undergraduate courses, the editor has chosen to consign extractive metallurgy to chemical engineering. So, our raw material is presumably metal ingot! Unfortunately, the volume does not follow current undergraduate course practice in considering the consequences of the interaction between materials properties, processing route, and product design, and only the chapters on solidification processing (casting) and powder metallurgy cover the shaping of metals to artifacts. The other chapters cover the production of novel materials by solidification, mechanical alloying, nanoprocessing and electrodeposition, and microstructural modification—either locally by ion implantation, laser treatment or globularly, or in bulk by recovery, recrystallization, and texture formation.

Although each chapter provides a useful review of its area, this volume lacks cohesion and suffers from the exclusion of solid-state forming and cutting. The connection between material microstructure and process route is paramount if optimum use is to be made of the many advanced materials and composites presently being invented. To relegate the forming and machining of these materials to the province of mechanical engineering is short-sighted, and hopefully a similar line is not taken in the volumes on processing ceramics and polymers. In short, this volume provides numerous reasonable physical metallurgical reviews but does not have the cohesion present in other volumes of the series.

At $265 each, these volumes are very expensive. Most are a must for materials libraries, but given the variation in approach and accessibility, it would be wise to assess them individually.

Review team: Nicholas Braithwaite, Lyndon Edwards, Charles Newey, Ken Reynolds, Graham Weaver, and George Weidmann are on the faculty of technology in the Open University, Milton Keynes, United Kingdom. Christina Doyle of Howmedica International was a consultant to the team. □

CLASSIFIED

Positions Available

Positions Available

FACULTY POSITION IN ADVANCED STRUCTURAL MATERIALS

Department of Materials Science and Engineering
Stanford University

The Department of Materials Science and Engineering at Stanford University invites applications for a tenure-track position at the assistant professor level in the area of advanced structural materials. Applicants should hold a doctorate in Materials Science and Engineering or in a related field and should have outstanding potential for establishing an independent research program and for teaching materials science at the graduate and undergraduate levels. The applicant should also have the ability to work in an interdisciplinary environment, as participation in interdepartmental programs and interaction with students and faculty in other disciplines will be expected. We are especially interested in strengthening our collaboration with faculty in the Applied Mechanics Division of Mechanical Engineering at Stanford. Thus, we will be particularly interested in candidates who would develop collaborative programs with faculty in Applied Mechanics in the area of micromechanics of structural materials.

We would expect the candidate to develop programs with a strong component of experimental research on the mechanical properties of such high-performance structural materials as ceramics, ceramic-matrix composites, intermetallic alloys and/or intermetallic matrix composites. Ideally such research should benefit from or promote a micromechanics approach to mechanical behavior of structural materials. We also seek an individual whose research would benefit from the Stanford environment of advanced materials synthesis and characterization.

Applications should include a summary of educational and professional backgrounds, a current list of published work, evidence of teaching experience and the names of at least three references who may be consulted by the search committee regarding the candidate's work. An indication of how the candidate's experience matches the position described above should also be given. The appointment could be made as early as October 1, 1993; applications should be submitted by **March 1, 1993** to:

Professor William D. Nix, Chairman
Department of Materials Science and Engineering
Stanford University
Stanford, CA 94305
(415) 725-2605

Stanford University is an equal opportunity employer and specifically invites and encourages applications from women and minorities.

FACULTY POSITIONS IN ENGINEERED STRUCTURAL MATERIALS

University of Southern California

The School of Engineering at the University of Southern California seeks two tenure-track faculty members in the general area of the synthesis and use of engineered structural composite materials. Appointments at the Assistant Professor rank are anticipated, but more senior appointments will be considered. The individuals who are appointed will be expected to participate in USC's planned Ultraperformance Engineered Structural Materials Program. The interdisciplinary program encompasses activities in Aerospace Engineering, Chemical Engineering, Materials Science, and Mechanical Engineering, and appointments will be made within these departments. Emphasis will be placed on approaching the synthesis of high-performance materials from microscale, nanoscale, and molecular perspectives. Polymer and crystalline matrix composite materials are of special interest. Candidates with experimental and/or theoretical and computational backgrounds are solicited. Teaching responsibilities will in part involve developing, in cooperation with local industrial firms, courses associated with the use of engineered materials as high-performance components.

Applications and nominations should be sent to:

Professor Y.C. Yortsos
Chairman of the Search Committee
University of Southern California
Los Angeles, CA 90089-1211

Applications will be considered until the position is filled.

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

POSTDOCTORAL POSITION ELECTRON MICROSCOPY ENERGY-LOSS SPECTROSCOPY

The Stevens Institute of Technology has an immediate opening for a postdoctoral research associate in its Analytical Characterization Facility. This Facility houses three transmission microscopes, including a field-emission 200 keV analytical TEM and a 300 keV high-resolution TEM. It is fully equipped with computational, specimen preparation, graphic, and photographic facilities. Applicants must have a good knowledge of energy-loss spectroscopy with an interest in light-element analysis and interfacial segregation studies. Opportunities exist to develop activities in holographic imaging and *in-situ* transformation research. Applicants should submit their resume, publication list, copies of selected publications, and the names of three references to:

Prof. D.A. Smith
Dept. of Materials Science and Engineering
Stevens Institute of Technology
Hoboken, New Jersey 07030
For information contact:
Prof. David A. Smith (201) 216-5306
or Prof. M. Libera (201) 216-5259.

FACULTY POSITION DEPARTMENT OF MATERIALS ENGINEERING

California Polytechnic State University
San Luis Obispo, CA

The Materials Engineering Department at Cal Poly seeks applicants for a tenure-track faculty position. PhD in materials engineering or related field required. Rank and salary will be commensurate with qualifications and experience. Duties include teaching a broad spectrum of materials engineering subjects. Position available September 1993. For additional information and an application please refer to Recruitment Code #33010 and write to:

Dr. Robert H. Heidersbach, Head
Materials Engineering Department
Cal Poly
San Luis Obispo, CA 93407

Screening of applicants will start **February 1, 1993,** and will continue until the position is filled. Cal Poly is strongly committed to achieving excellence through cultural diversity.

The university actively encourages applications and nominations of women, persons of color, and members of other underrepresented groups. AA/EEO.

Positions Available

FACULTY POSITION
MATERIALS SCIENCE AND ENGINEERING
University of Washington

The Department of Materials Science and Engineering at the University of Washington, Seattle, is seeking candidates for one or more tenure-track faculty positions at the assistant, associate or full professor level with an anticipated starting date of September 16, 1993. Candidates should have expertise in emerging areas of materials research; particular interest for one of the positions is in ceramic processing and related fields. Applicants with industrial experience may be considered for the R.J. Campbell Professorship.

Candidates must hold a PhD degree with an appropriately distinguished record of research publications, familiarity with research in federal laboratories and other universities, a record of developing externally funded research programs, and experience in teaching. Industrial experience is desirable. Responsibilities of the position include teaching at the undergraduate and graduate student levels, graduate student supervision and the development of externally funded research programs in areas of current interest.

Applications for those positions will be received until the positions are filled. Send inquiries and applications, including a listing of publications, a document outlining research and teaching program plans and names of three references to:

Prof. William D. Scott
Search Committee Chair
Materials Science and Engineering Department
University of Washington
Seattle, WA 98195
(206) 543-2600; FAX (206) 543-3100

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

DIRECTOR
MATERIALS SCIENCE CENTER

The Florida State University invites inquiries and applications for the position of Director of the Center for Materials Research and Technology (MARTECH).

MARTECH is composed of faculty from the Departments of Chemistry, Physics and from the Florida A&M University/Florida State University College of Engineering with a common focus on materials research. A broad range of state-of-the-art synthesis and characterization instrumentation is in place.

We seek a senior individual in the area of materials science. Applicants should have an outstanding record in independent research and administrative experience is a plus. The Director is expected to assume a leadership role in developing cooperative scientific programs including interactions with scientists in the Supercomputer Computational Research Institute, Structural Biology Initiative and National High Magnetic Field Laboratory and also initiating involvement with appropriate industries. The Director will hold the rank of professor in one of the above Departments.

All inquiries and applications should be directed to Director Search Committee, Center for Materials Research and Technology, Keen Building, B-159, Tallahassee, FL 32306-3016.

FSU is an Affirmative Action/Equal Opportunity employer.

FACULTY POSITION
Arizona State University
Department of Chemical, Bio and Materials Engineering

Arizona State University, Department of Chemical, Bio and Materials Engineering is seeking applicants for a tenure track faculty position in the Materials Science and Engineering Program. The position, which we anticipate authorization to fill in August, 1993, has the rank of Assistant Professor; however a position of higher rank may be offered to an experienced candidate with an exceptional record.

The successful candidate will be expected to teach and contribute to program development at both the undergraduate and graduate levels, and to develop an externally funded independent research program.

Applicants are required to hold a PhD degree in materials science and engineering or a closely related discipline, and have a research interest in the area of electronic materials processing. Expertise in the areas of thin-film synthesis, processing, and characterization is desired.

Applications must be received by **February 1, 1993,** or the first of each succeeding month until the position is filled. Candidates should provide a current vitae, a summary of research and teaching interests, and name, address and telephone number of three references to: Dr. Lester E. Hendrickson, Chair of the Materials Faculty Search Committee, Department of Chemical, Bio and Materials Engineering, Arizona State University, Tempe, Arizona 85287-6006.

Arizona State University enforces Affirmative Action hiring policies.

Transducer Design Engineer

The Medical Products Group (MPG) of Hewlett-Packard has a challenging opportunity to design and develop ultrasonic transducers for our medical imaging system.

We are looking for a talented individual with a background in ferroelectric and piezoelectric materials and an orientation towards device fabrication.

A knowledge of ultrasound transducer design, modeling, and system integration is desirable; M.S. or Ph.D. in Materials Science, Solid State Physics or EE required. Experience in a related field is preferred.

Candidates should send their resumes to: Rich Brown, Staffing, Hewlett-Packard, 3000 Minuteman Road, Andover, MA 01810. Fax (508) 687-2017; Phone (508) 681-2286. HP is an equal opportunity employer.

HEWLETT PACKARD

Positions Available

FACULTY POSITION
EXPERIMENTAL CONDENSED MATTER PHYSICS
Carnegie Mellon University

We seek to hire an outstanding senior condensed matter physics experimentalist. The successful candidate should bring an active research program and should be ready to take a leading position in the condensed matter group as well as in the Department and the University. This person will be expected to play a major role in our efforts to hire additional faculty over the next five years. We will consider applicants from all areas of active condensed matter research but we have identified the following as areas of particular interest: composite, electronic, and other new materials; scanning microscopies and advanced optical techniques; nanostructures and mesoscopic physics; magnetism, nonlinear dynamics; surface and interface science; and x-ray and neutron scattering. We currently have efforts in optical properties of nanostructures, wetting and organic thin films, surfaces and interfaces, magnetism, and x-ray and neutron scattering. The experimental group is complemented by our strong condensed matter theory group and by interdisciplinary research efforts throughout the University. Please send resumes and supporting information by **January 31, 1993** to Robert F. Sekerka, University Professor and Chair of the Search Committee, Department of Physics, Carnegie Mellon University, Pittsburgh, PA 15213.

Carnegie Mellon University is an affirmative action, equal opportunity employer.

ASSISTANT PROFESSOR
The Department of Mechanical Engineering and Materials Science
Duke University

is looking for an outstanding, energetic PhD in the material sciences to take a tenure-track position as an assistant professor by September 1993. Possible research areas include—but are not restricted to—electronic materials, ceramics, smart materials, micromechanics, and the science and technology of interfaces and molecular self-assembly. Applicants should show promise for sustained research productivity and attracting support for original research. The position would provide a competitive salary, start-up funds for beginning a research program, and an attractive university environment with highly qualified students. More experienced candidates are not excluded, but the expectation is that individuals who are relatively early in their careers will be given preference. Please send resumes by **February 1, 1993,** to Professor Ulrich Gösele, Chairman of the Search Committee, Department of Mechanical Engineering and Materials Science, Box 90300, Duke University, Durham, NC 27708-0300.

Duke University is an Equal Opportunity/ Affirmative Action Employer.

ASSISTANT PROFESSOR
MANUFACTURING PROCESSES

The Department of Mechanical, Aeronautical and Materials Engineering, University of California–Davis invites applications for an Assistant Professor position in manufacturing processes. Preference given to candidate with strong backgrounds in both the science base as well as experimental aspects of manufacturing processes. PhD degree in mechanical engineering is required with research experience in manufacturing processes such as (but not limited to) electric discharge machining, plasma sintering, surface and electronic materials processing (including applications of laser scanning and reacting flows as well as vapor deposition techniques), metal cutting, advanced materials and plastic processing (including injection molding). Strong interests needed in teaching undergraduate and graduate courses in mechanical engineering and developing a funded research program.

Send resume to Professor A. McKillop, Chair, Department of Mechanical, Aeronautical and Materials Engineering, University of California, Davis, California 95616. To insure consideration, applications should be submitted by **March 1, 1993.** Position open until filled.

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

Westinghouse Idaho Nuclear Company, Inc.

Glass-Ceramic Development Scientist

Qualifications: MS or PhD in Ceramic Engineering, or Glass Science and Technology, or Materials Science, or Geophysics and 5-10 years experience.

Job Duties: Develop glass and/or glass ceramic waste forms from HLW at the INEL that meets federal regulatory criteria. Work includes characterizing durability, composition, microstructure, phase stability and physical and thermal properties.

For immediate consideration, send resume and a copy of this ad to:

Ace Ballard
Ref: MRSB
Westinghouse Idaho Nuclear Company, Inc.
P.O. Box 4000
Idaho Falls, ID 83403

An Equal Opportunity Employer U.S. Citizenship required.

Positions Wanted

Materials Scientist/Surface Analyst: PhD 1989 with three years of postdoctoral experience, seeks R&D, postdoctoral and/or Faculty opportunities. Specialized in SIMS, TEM, XPS, SEM, FTIR, S. Ellipsometry and XRD. Experienced in thin-film deposition (Sputtering and Plasma) and analysis of semiconductors and metal oxides. Also interested in superconductors, magnetic materials, polymers, lithography, etc. Please reply to **Box No. 105.**

TO REPLY TO BOX NUMBER, WRITE:
Box No._____, c/o MRS Bulletin
Materials Research Society
9800 McKnight Road
Pittsburgh, PA 15237