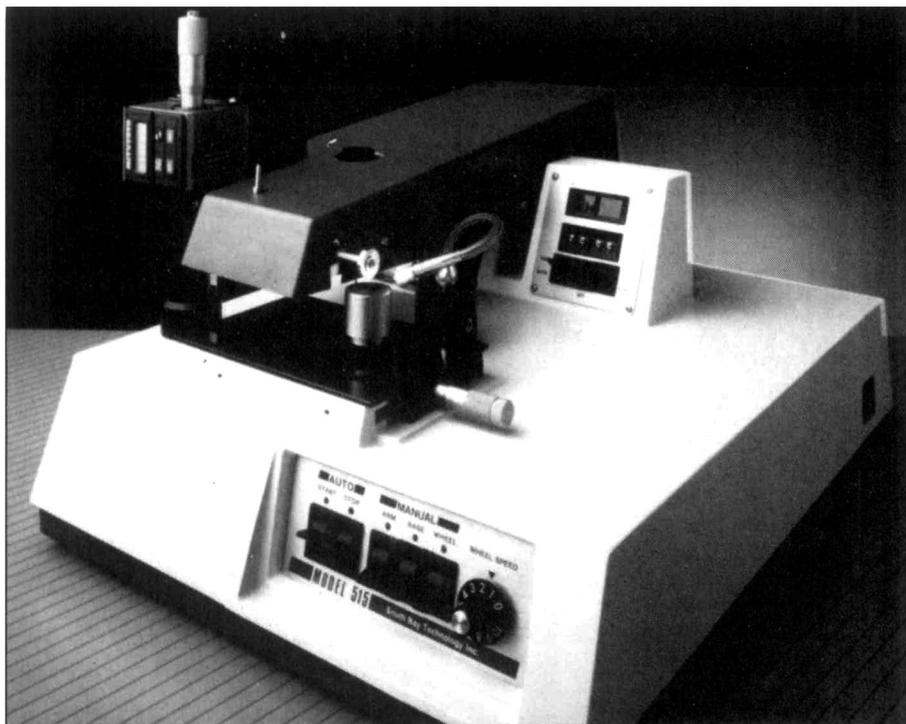


## RESEARCH RESOURCES

*A summary of new products and services for materials research...*



### **Precision Dimpling Instrument**

**Precision Dimpling Instrument:** Primarily used to pre-thin specimens for transmission electron microscopy before ion milling or quick etching, this instrument can be used for dimpling very hard materials or for dry dimpling. A multi-functional materials preparation instrument, Model 515 can be used to prepare specimens for Auger and other surface analysis operations and can also be converted into a small diamond wheel saw. South Bay Technology, Inc., 5209 Tyler Ave., Temple City, CA 91780-3698; (818) 442-1839.

**Vacuum Products:** Expanded 750-page free catalog has been completely reorganized in a new "find-it-fast" format. Detailed descriptions are given for a comprehensive selection of vacuum components, systems, deposition equipment, vacuum measurement, flow control instrumentation, and reclaim/repair services. In addition, the technical notes preceding each section provide valuable information on product applications and functions to the novice in the vacuum industry. For example, the technical notes for the fluids section cover such topics as choosing the correct oil, properties of hydrocarbon and synthetic fluids, safe handling, maintenance, and fluid reclaim. Products can be used for vacuum pressures from 20 torr to  $5 \times 10^{-11}$  torr. Kurt J. Lesker Co., 1515 Worthington Ave., Clairton, PA 15025; (800) 245-1656 or (800) 242-0599 in Pennsylvania.

**Argonne National Laboratory Research Highlights:** Annual 48-page report highlights Argonne's research and development programs including: the 7 GeV Advanced Photon Source to be completed in the mid-1990s; superconductivity research; the Intense Pulsed Neutron Source, which accelerated its 2-billionth pulse of protons in 1987; the Integral Fast Reactor, which is being tested as a safe power source to succeed today's nuclear reactors; and parallel computing, a new initiative. Other highlights include biomedical and environmental research, technology transfer; and educational programs. Argonne National Laboratory, 9700 South Cass Avenue, Argonne, IL 60439.

**Government Research Directory:** Comprehensive 987-page descriptive inventory of the U.S. government's research programs provides information on research facilities, offices, and programs owned and operated by the federal government. Included are descriptions of user-oriented facilities, cooperative research programs, programs involving government grants and contracts, test centers, resource and service units, and offices that administer or coordinate important research programs. Arranged by sponsoring agencies, the 3,700 entries contain detailed information about each program—name, address, and telephone number of parent department or agency, name and title of person in charge, staff size and composition, descrip-

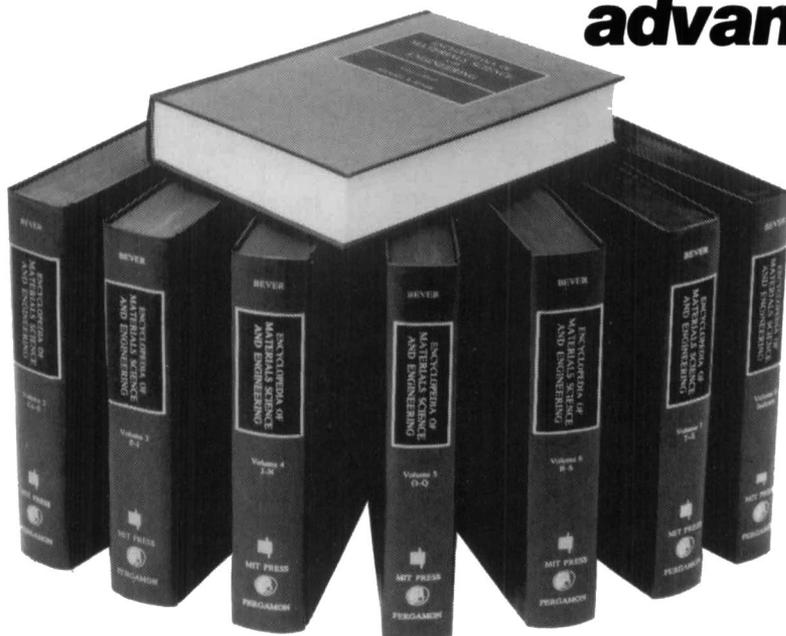
tion of research, special facilities, publications and information services, and more. Three indexes—master name, keyword and agency; geographic; and subject—provide additional avenues to needed information. Price: \$375.00. Gale Research Inc., Book Tower, Detroit, MI 48226-9948; (800) 223-4253 or (313) 961-2242.

**Magnetic Resonance Imaging Services:** Laboratory located on the Rensselaer Polytechnic Institute campus is equipped with state-of-the-art magnetic resonance imaging capabilities and can offer nondestructive testing and evaluation of a broad range of samples from biological organisms to polymers and other solids. The laboratory is currently exploring new industrial applications of magnetic resonance imaging and can offer consulting as well as NDE services. Magnetic Resonance Research Laboratory, Intermagnetics General Corporation, 1223 Peoples Avenue, Troy, NY 12180; (518) 271-8286.

**Energy Dispersive X-Ray Microanalysis:** Company can offer semi-quantitative analytical information about a wide range of elements in ferrous and nonferrous alloys, powders, corrosion debris, and polymeric materials as well as in paints and surface coatings. Cost-effective energy dispersive analysis is appropriate for a wide variety of scanning and transmission electron microscope applications. A windowless detector enables the EDAX PV9870 system to see elements lighter than sodium and can offer analytical data on carbon, oxygen, nitrogen, and boron. Climax also offers materials research and development consulting combined with extensive materials testing and metallographic services. Climax Research Services, 27200 Haggerty Rd., Farmington Hills, MI 48018; (313) 489-0720.

**Gas Purifier for Reactive Processes:** Purifier addresses the problem of purifying reactive process gases used in semiconductor manufacturing and processing at the point of use, regardless of their source. Epigrade™ adsorbents remove water (to  $< 10$  ppb), oxygen (to  $< 10$  ppb), and other oxygenated impurities from arsine, phosphine, ammonia, and inert gases such as hydrogen, silane, helium, argon, and nitrogen. Analyses show that Waferpure™ Gas Purification Systems do not contribute any other emissions to the critical gas streams (by inductively coupled plasma atomic emission spectroscopy and gas chromatography). The purifier can be hooked up without introducing contamination from dead spaces. Advanced Technology Materials, Inc., 520-B Danbury Rd., New Milford, CT 06776; (203) 355-2681. □

# Meeting the challenge of advanced materials.



## ENCYCLOPEDIA OF MATERIALS SCIENCE AND ENGINEERING

Michael B. Bever, Massachusetts Institute of Technology,  
Editor in Chief

**“The Encyclopedia of Materials Science and Engineering wins on all accounts. Not only is it authoritative, encyclopedic, well organized and useful, but the same unexpected pleasures found while browsing any encyclopedia are encountered here too.” – Harry J. Leamy, MRS Bulletin**

- 8 volumes, including a separate index volume
- 1,580 articles, all with cross references to other related articles
- 3,050 illustrations
- 1,300 tables
- 6,100 large-format pages
- 60,000 index entries
- 12,500 bibliographic entries
- The Index Volume also contains a 30-page systematic outline of the Encyclopedia—guiding readers to relevant articles—and a materials information sources section that points to other useful works, handbooks, journals, books, and databases.

ISBN 0-262-02233-8 \$1,950.00

### Supplementary Volume I

Robert W. Cahn, University of Cambridge, Editor  
Michael B. Bever, Massachusetts Institute of Technology,  
Senior Advisory Editor

Over 100 new articles revise and extend original material in the *Encyclopedia of Materials Science and Engineering* and review newly emerging areas of research.

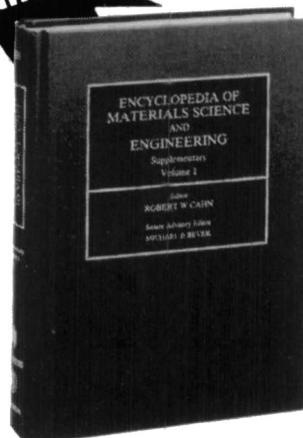
#### Selected articles

Aluminides for structural use • Art forgeries: scientific detection • Arteries: synthetic • Coated papers and board • Composites: in-situ precipitation in polymers • Damascus steels • Dislocations, electrically charged • Electrodeposited polymer coatings • Float glass process • Glassy crystals • High-rate deformation of metals • Hydrogels as biomedical materials • High-voltage electron microscopy • Inks for printing • Laser microprobe mass spectrometry • Liquid crystal polymers: structure • Melting in two dimensions • Metallic glasses: diffusion • Migration of bubbles: voids and inclusions in crystals • Multilayer polymer films • Nanocrystalline materials • Optical thin films: production and use • Phase transformations induced by irradiation • Plastic organic crystals • Polymer sheet manufacture and applications • Powder mechanics • Radiation effects on wood • Reaction injection molding of polymers • Single-crystal and liquid-crystalline polymer fibers of high modulus and strength • Sol-gel processes in glassmaking • Solidification and casting: computer simulation • Superplasticity in iron-based alloys • Ultrahigh-carbon steels • Void lattices • Water: liquid metastable states • Wires: rapid solidification

**Save by ordering before July 31, 1989**

\$245.00 prepublication price, \$295.00 thereafter  
650 pp. ISBN 0-262-03142-6

Now  
available



Order through your library wholesaler  
or directly from

**The MIT Press**

55 Hayward Street  
Cambridge, MA 02142  
Call 1-800-356-0343

Copublished with Pergamon Press