

RESEARCH RESOURCES

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

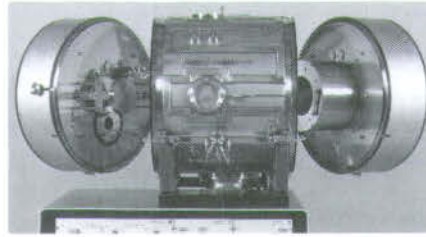
Optics in Education Survey: Comprehensive directory of optics programs in colleges and universities across North America describes academic and research facilities, and faculty and their specializations. Survey also lists such details as tuition rates and admission deadlines, and identifies contacts for further information. SPIE, P.O. Box 10, Bellingham, WA 98227-0010; (202) 676-3290.

Auger Microprobe: Nanoscan 50 Auger microprobe combines MAC 2 analyzer with a high brightness, low voltage, electrostatically focused field emission source. System features high image resolution due to low primary energy, high sensitivity, constant energy resolution,



video-rate image acquisition, foreground/background operation, and automated sample analysis. Options include XPS and/or SIMS capabilities, a duoplasmatron ion source for rapid profiling, and an image processing package. Riber Division, Instruments SA, Inc., 6 Olsen Avenue, Edison, NJ; (201) 494-8660.

Scanning Tunneling Microscope: UHV compatible instrument for atomic resolution imaging and I-V spectroscopy is available as an add-on package for existing vacuum systems or as a complete system. Features include in vacuo exchange of sample and tip, bakeability to 120°C, internal high frequency vibration isolation, binocular microscope to view the sample and tip region, IEEE 488 control of all electronics and piezo elements, image display and process software (IBM AT), lowest resonant frequency greater than 4.5 kHz, and Current Imaging Tunneling Spectroscopy. Microscience, 41 Accord Park Drive, Norwell, MA 02061; (617) 871-0308.



Ion Beam Processing Systems: Brochure highlights four ion beam processing systems: single source, dual source, multi-source, and the Mark 50 system. Applications include etching, reactive ion beam etching (RIIBE), chemically assisted ion beam etching (CAIBE), single or multilayer deposition, and ion beam assisted/enhanced deposition (IBAD) and texturing. Ion Tech, Inc., 2330 East Prospect, Fort Collins, CO 80525; (303) 221-1807.

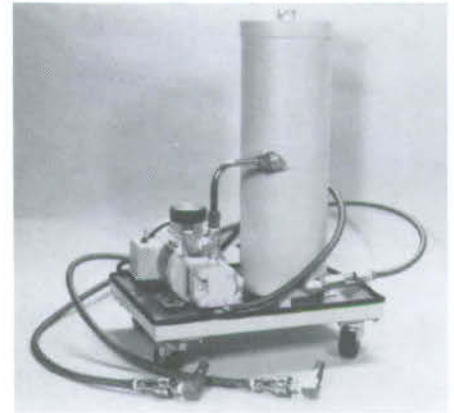
Advanced Structural Ceramics: Comprehensive market report assesses advanced ceramic materials as an emerging technology with a broad base of applications and a growing list of material compositions. The study defines growth rates, processing considerations, and new techniques. It also discusses industrial and national efforts to increase U.S. leadership in advanced ceramics. Applications most extensively covered include automotive/heat engines, cutting tools, industrial applications, aerospace and defense applications, and bioceramics. Business Communications Company, Inc., 25 Van Zant Street, Norwalk, CT 06855; (203) 853-4266.

High Vacuum Components Catalog: 80-page catalog describes a comprehensive line of vacuum pumps, baffles, fluids, gauges, valves, power supplies, and residual gas analyzers. Featured are the Accuvac 500 vacuum gauge controller which reads vacuum pressure from atmosphere to 0.1 millitorr and the GTC 380 thermocouple gauge controller which reads vacuum pressure from 2 to 10^{-3} torr. Also included is a full line of stainless steel ASA flange angle, gate, and inline valves. CVC Products, Inc., 525 Lee Road, P.O. Box 1886, Rochester, NY 14603; (716) 458-2550.

Excimer Laser Semiconductor Applications: Monthly publication, *Highlights* # 4, features articles on IBM's experience with excimer laser equipped pattern generator, excimer laser contact printing by Karl Suss, x-rays from KrF laser produced plasma, and the use of excimer lasers in modern microlithography. Lambda Physik, 289 Great Road, Acton, MA 01720; (617) 263-1100.

Superconductor Materials and Devices: Market report examines the business and technology of superconductivity, from basic superconductor technology to current and potential applications. The report analyzes many properties and their relevance to potential applications while examining technical and economic factors which have affected the growth of each application. Also included are existing research groups and companies in the field, market projections and implementation schedules for various applications. Business Technology Research, Inc., 16 Laurel Avenue, P.O. Box 81210, Wellesley Hills, MA 02181; (617) 237-3111.

High-Capacity Oil Filtration System: Compact, mobile OF3000 is designed for use with mechanical oil-sealed vacuum pumps in applications requiring large volumes of heavy particulate filtration.



Standard equipment includes dripless quick disconnects, pressure gauge, oil sight glass, integral gear pump with built-in bypass, canister drain valve, and tangential flow inlets for greatly improved oil flow. Five high-capacity filter elements are available. Leybold Vacuum Products Inc., 5700 Mellon Road, Export, PA 15632; (412) 327-5700.

Superconductor Component Industry—Market Projections: 183-page superconductivity report released in December 1987 projects actual and future markets for superconductivity in electronics (predicted as the first application area), medical imaging systems (the largest existing market for superconductors), high energy physics, industrial equipment, electrical power, transportation systems, and government R&D. Report *GB-106 Superconductor Component Industry: Markets for New and Old Technologies*, is available for \$1,950 from Business Communications Company, Inc., 25 Van Zant Street, Norwalk, CT 06855; (203) 853-4266.

Physics News in 1987: Nineteenth in a series of annual reviews of physics news contains articles selected and prepared by American Institute of Physics member societies. Topics include: acoustics, astrophysics, chemical physics, condensed matter physics, crystallography, physics education, electron and atomic physics, elementary particle physics, fluid dynamics, geophysics, physics in industry, medical physics, nuclear physics, optics, plasma and fusion physics, polymer physics, and vacuum physics. Available for \$5 per copy from Public Information Division, American Institute of Physics, 335 East 45th Street, New York, NY 10017; (212) 661-9404.

Cryogenic Thermometry: 16-page catalog features temperature controllers, thermometers, monitors, cryotest systems, accessories, and instrumentation. Temperature sensors include silicon diodes, germanium resistors, carbon-glass resistors, and capacitance sensors. New controller product line offers exceptional control stability and temperature range capability, as well as many other features. Lake Shore Cryotronics, Inc., 64 East Walnut Street, Westerville, OH 43081; (614) 891-2243.

Superconductivity at Argonne National Lab: Logos magazine (Vol. 5, No. 3, 1987) focuses on superconductivity research at Argonne National Laboratory. Included are articles by the lab's researchers, information on a superconductivity hotline, a complete list of all the lab's researchers in the superconductivity program, and a partial list of publications on high T_c superconductivity authored by Argonne scientists during 1987. Argonne National Laboratory, 9700 South Cass Avenue, Argonne, IL 60439; (312) 972-5575.

Chrome-Doped GaAs Substrates: High-resistivity chromium-doped GaAs substrates, available in a variety of geometries including 2-inch round wafers and rectangular discrete field-effect transistors (FETs) and microwave devices. Wafers are available without surface polish, or polished on one or both sides. Typical surface flatness of 2-inch double-side polished wafers is better than one micron per inch in diameter. Substrates feature high resistivity exceeding 10^7 ohm-cm, and etch pit density is typically less than 20×10^3 per cm^2 . Crystal Specialties International, 2853 Janitell Road, Colorado Springs, CO 80906; (719) 540-0990.

Memory Media Sputtering System: The DDS-100 is designed specifically for R&D process development of computer memory disks. Processes developed on it can be transferred to the Varian MDP-1100 or MDP-2000 production sputtering systems for high-throughput manufacturing. The DDS-100 offers process flexibility with accurate, repeatable results, and can be fitted to specific customer applications. A thickness uniformity of better than $\pm 5\%$ over the disk surface can be obtained using circular sources. The system can also be supplied with rectangular magnetrons for sputtering on substrates which are not flat disks. Varian Associates, Inc., 611 Hansen Way, Palo Alto, CA 94303; (415) 424-5781.

Custom Translations: New service can complete on-demand English translations of scientific papers written in most major languages. Materials Information Translations Service, The Institute of Metals, 1 Carlton House Terrace, London, SW1Y 5DB, UK; 44-1-839-4071. □



- Beam Profile Monitors
- Electrostatic Lenses
- Beam Steerers
- Raster Scanner
- Slit Systems



- Faraday Cups
- Beam Line Insulators
- Foil/Target Changers
- All Metal Valves



- Fast Closing Valves
- Gas Metering Valves
- Titanium Sublimators
- Accelerator Tubes
- Ion Sources



- Light Link Systems
- RBS Analysis Systems
- RBS and PIXE Chambers

The NEC vacuum and beam line components are ultra-high vacuum compatible. The NEC acceleration tubes are metal-ceramic bonded and fully bakeable. The NEC valves are all metal sealed.

MeV Ion Beam Systems and Components

The Pelletron Accelerator Systems range in terminal potential from 100 kV to 25 MV for RBS, PIXE, AMS, NRA, and other research applications. Automated systems for industrial ion implantation are

available with beam energies from 200 keV to above 8 MeV.

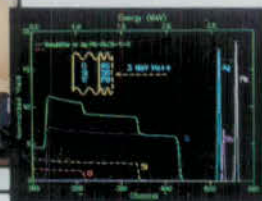


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Graber Road, Box 310
Middleton, Wisconsin 53562

Tel. 608/831-7600
Telex 26-5430



3 MV Single Ended Pelletron, Model 3UH



3 MV Tandem Pelletron, Model 9SDH-2

Please visit booth no. 203 at the MRS Show in Reno, April 5-7, 1988.