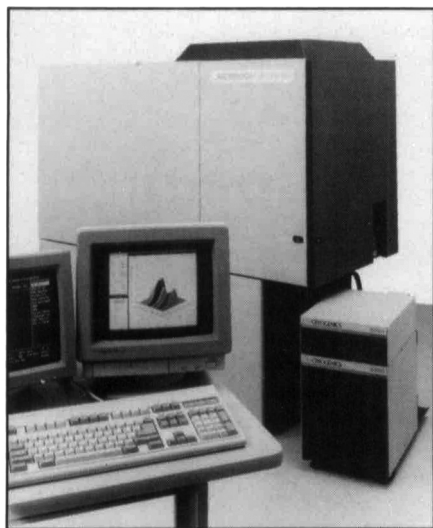


A summary of new products and services for materials research...



Scanning Photoluminescence System

Scanning Photoluminescence System:

Instrument for low temperature, spatially and spectrally resolved photoluminescence measurement and mapping is based on technology developed for research scanning laser microscopy. It includes an MS DOS-compatible 80386-based computer, and sophisticated image processing and display capabilities. The SPM-200 is designed for high resolution mapping of low temperature photoluminescence in semiconductor materials and devices. Samples up to 4" x 4" are cooled to less than 14 K and scanned on precision x-y translation stages. A map of the photoluminescence of the material or device is generated, with spatial resolution approaching 5 microns. The SPM-200 includes two lasers, and will detect photoluminescence from 0.5 to 5.0 microns. Software for mapping at a fixed wavelength, performing peak detection or scanning through the entire spectrum at a fixed point is standard. Scientific Inc., 419 Phillip Street, Unit 9, Waterloo, Ontario, Canada, N2L 3X2; (519) 746-6260.

Ion Beam Sources: Both 5 cm and 11 cm models offer maximum ion beam source control and performance. The 5 cm source operates in a versatile range (50-2000 eV, 0-200 mA) from low energy, low-to-moderate current density cleaning or ion beam assisted/enhanced deposition applications through etching to demanding high energy deposition processes. Easy-to-maintain and service 11 cm source also has a wide operating range (50-2,000 eV, 0-350mA) and is ideal for ion beam sputter deposition or as an assist source at low energy operation. Ion Tech, Inc. 2330 East Prospect, Fort Collins, CO 80525; (303) 221-1807.

ASTM Standards and Technical Publications: Free 1989 publications catalog describes 67 volumes of the *Annual Book of ASTM Standards* and several hundred ASTM technical publications, compilations, data series, and standard adjuncts. ASTM standards and related technical publications are used worldwide to specify materials, assure quality, integrate production processes, promote trade, and enhance safety. ASTM Customer Service, 1916 Race Street, Philadelphia, PA 19103; (215) 299-5585.

Catalytic Membrane Reactor Opportunities:

Study suggests potential commercial opportunities for catalytic membrane reactors in industrial catalysis. The study: (1) reviews reactor capabilities and critically analyzes barriers to commercialization; (2) examines performance of polymeric membrane reactors through case studies of selected applications; (3) critically reviews membrane materials including organic polymers, inorganic materials (particularly ceramic), and solid electrolytes; (4) examines recent work in the USSR and Japan; and (5) identifies major research challenges, particularly the desirability of developing very thin (submicron) inorganic and solid electrolyte membranes. Price: \$7,000. Catalytica Studies Division, 430 Ferguson Drive, Bldg. 3, Mountain View, CA 94043; (415) 960-3000.

AC Magnetic Susceptibility Testing Service:

Newly introduced testing service offers accurate, economical AC magnetic susceptibility measurements for all types of materials, including conventional and high temperature superconductors, paramagnetic and ferromagnetic materials, spin glasses, amorphous alloys, and diluted magnetic semiconductors. Test data can include: determination of temperature dependence of both real and imaginary components of susceptibility, examination of the frequency/AC field effect, detection of perfect diamagnetism in superconductors, and determination of magnetic transition temperatures for spin glasses and antiferromagnetic compounds. Two options are offered, one for precise determinations and one for more general information and rapid-screening sample measurements. Lake Shore Cryotronics, 64 E. Walnut Street, Westerville, Ohio 43081-2399; (614) 891-2243.

ECR Plasma Stream Source: Electron Cyclotron Resonance (ECR) microwave plasmas can operate over a much larger range of pressures than rf plasmas and can achieve an order-of-magnitude higher plasma density than an rf plasma at the same pressure. In addition, the ECR plasma stream source has no filaments, can be used with a wide range of inert and reactive gases, and can be operated stably for hundreds of hours. Applications include low temperature PECVD, low energy ion bombardment, and reactive ion etching. Microscience, Inc., 41 Accord Park Drive, Norwell, MA 02061; (617) 871-0308.

Desktop Double-Crystal X-Ray Diffractometer:

Computer-automated system runs on 115 volts and has an air-cooled x-ray tube. System offers horizontal sample loading with rotary and translation sample stage and can run over 100 x-ray rocking curves per day, with analysis for lattice mismatch, splitting, ternary composition, FWHM, and film thickness. North Eastern Analytical Corporation, 17 Sherman Road, P.O. Box 25, Millis, MA 02054; (508) 376-4132.

PECVD Systems:

Plas Mox 1 and 2, small footprint R&D and production PECVD deposition systems, are now available in the United States and Canada. Processes include silicon nitride, silicon oxide, amorphous silicon, silicon oxynitride, PETEOS, and etch. Systems feature automatic processing with menu-driven software, fully interlocked safety system, ability to process 2 to 8 inch wafers and larger substrates, controllable temperature to 450°C, and low or high frequency rf generator options. Products of Plas Mos, Munich, W. Germany. CVC Products, Inc., 525 Lee Road, P.O. Box 1886, Rochester, NY 14603; (716) 458-2550.

Multiple Sputter Gun Systems:

Three, four, or five-gun systems are designed for sputter coating either multiple films in a controlled vacuum environment, or for co-deposition from multiple sources. Systems are based on the Gun II Low Profile Source, which is designed for UHV applications with all guns mounted on a Conflat® flanged fixture. Each fixture is machined to focus the solid angles of the guns on a common intercept point. Feedthroughs can be provided to permit individual shutters to be installed perpendicular to the deposition solid angle. One-, two-, or three-inch diameter guns are available. US, Incorporated, The Pruneyard Tower Two, Suite 405, Campbell, CT 95008. □