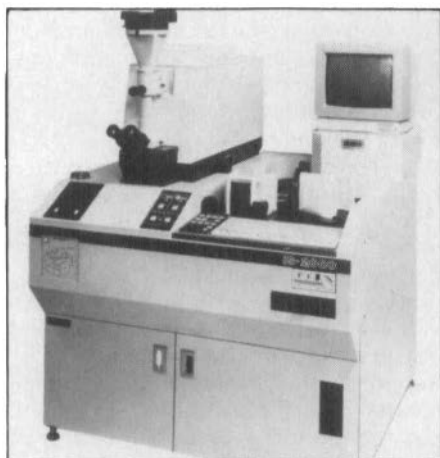


## RESOURCES

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



**Patterned Wafer Inspection System**

**Patterned Wafer Inspection System:** Hitachi's IS-2000 patterned wafer inspection system offers fast detection and in-line review of particles defects on wafers as large as 8 in. System throughput is about 5 min per 6-in. wafer, including load, unload, and setup, and is independent of sensitivity, process level, and device type. The IS-2000 features reduced noise, rapid initial inspection at defect source, red high-lighting of defects, and automatic linkage to Hitachi SEMs.

Circle No. 56 on Reader Service Card.

**Superconducting High-Resolution Scanning Magnetometer:** High-resolution scanning magnetometer with superconducting electronics from Quantum Magnetics allows nondestructive testing of metallic and composite structures with higher sensitivity than conventional instruments, using SQUIDs. Possible applications include corrosion resistance testing of coatings, assessing metal quality under paint, disk drive magnetic inspection, locating subsurface cracks, aircraft rivet inspection, and nuclear power plant failure-prone part inspection.

Circle No. 55 on Reader Service Card.

**Viscosity Measurement System:** Schott ViscoSystem AVS350 provides safe, efficient, and repeatable PC-controlled viscosity measuring, including software, for clear, opaque, or corrosive liquids. The system uses the capillary method, and features sensing by optoelectronics or thermal conductivity. The AVS350 can operate as a stand-alone unit or be stacked eight high, and linked to a PC for computer-controlled, multiple-viscometer operations. The software can handle one job or do multitasking for up to eight units.

Circle No. 52 on Reader Service Card.

**Large Area Diamond Film Deposition System:** Plasma deposition system from ASTeX called LADS (large area diamond system) can grow 8-in. diameter diamond films with 25% uniformity and coat a wide variety of shapes. LADS films are of high quality and polycrystalline with crystal structures ranging from fine-grained nanocrystalline to micron range crystallite sizes. The unit is powered by a 5,000 watt microwave generator and the plasma torch operates in a resistivity heated furnace.

Circle No. 53 on Reader Service Card.

**Scanning Infrared Microprobe:** IRus/SIRM from Spectra-Tech uses microbeam analysis to identify, quantify, and map organic and inorganic materials, rapidly processing electronic devices, polymers, pharmaceuticals, and biological samples. Analysis is nondestructive, and samples remain at ambient conditions. The IRus/SIRM works in four modes to routinely analyze surfaces, thin films, layers, contaminants, and bulk materials. Free, 12-page brochure available.

Circle No. 59 on Reader Service Card.

**Variable-Angle Horizontal ATR with ER Capabilities:** Connecticut Instrument Corp. offers the Explorer™, a horizontal attenuated total reflection (ATR) accessory with a continuously variable angle of incidence, 25-85°, with external reflection (ER) accessory capabilities. It can be used to analyze solids, liquids, pastes, powders, gases, and film coatings on metal surfaces. Attachments are available for various sample types. The Explorer comes with transfer optics, a flush-mount 45° ZnSe sampling crystal mounted in a stainless steel plate, a pressure-generating clamp, a stainless steel 3 mm external reflection waveguide cell with gold-coated optics, a reference ER gold mirror, instruction manual and storage case.

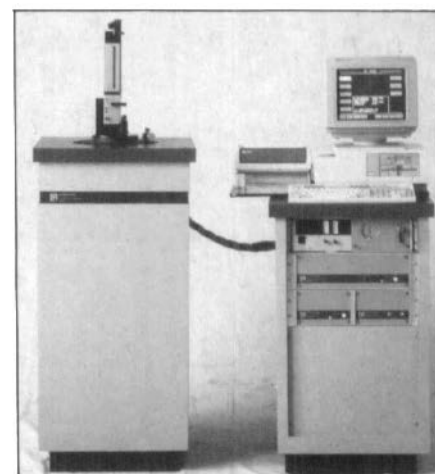
Circle No. 61 on Reader Service Card.

**Math and Science Film and Video Catalog:** Free, 114-page catalog from Pennsylvania State University's Audio-Visual Services, *Films and Video for Mathematics and Physical Sciences*, describes more than 950 programs in aerospace, astronomy, chemistry, computer science, energy, geology, materials science, mathematics, meteorology, physics, science, and technology. The selections are specifically designed to enhance classroom presentations and individual instruction of scientific concepts and principles. All films and videocassettes are available for rental; some can be purchased.

Circle No. 62 on Reader Service Card.

**Magnetic Property Measurement System:** Quantum Design's MPMS7 system for measuring magnetic moment has a field strength of 7 T and allows examination of phenomena that would be undetectable with lower-field instrumentation. Applications include studies of C<sub>60</sub> carbon, superconductors, spin glasses, permanent magnets, magnetic media, and biological materials. Field resolution of the MPMS7 is ±0.2 to 6000 G, and ±2 G to 7 T. Magnetic field uniformity is 0.02% over 4 cm, and 0.005% over 2 cm. The MPMS7 can measure magnetic moment at temperatures ranging from 1.9 to 800 K with an optional oven. 5.5 T MPMS models can be retrofitted to attain MPMS7 capabilities.

Circle No. 60 on Reader Service Card.



**Magnetic Property Measurement System**

**Superconducting Multilayer Interconnect Technology:** Using photolithographic techniques, Lawrence Berkeley Laboratory (LBL) researchers have developed multilayer structures using high T<sub>c</sub> superconducting YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub> in trilayers alternating with insulating materials. LBL seeks companies interested in licensing the production technique and devices based on their findings. The technology can be applied to construct multilayer interconnects for logic or memory elements, or high-speed transmissions lines; to different substrates, deposition methods, and insulation materials, and structures with more than two superconducting layers; and to high T<sub>c</sub> SQUIDS with new levels of sensitivity. A market is expected in microelectronics, medical imaging, on-location geological sensing, and laboratory instrumentation.

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