

## RESEARCH RESOURCES

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

### **Ultralow Light-Level Imaging System:**

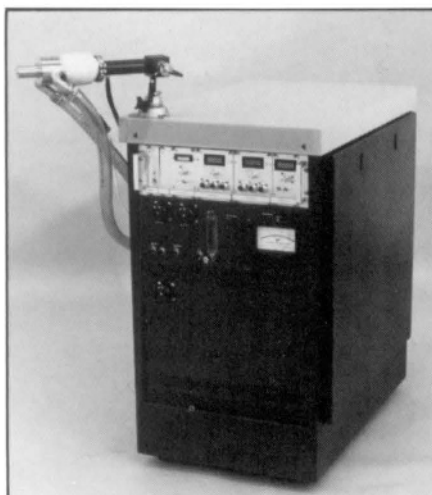
Complete with camera, computer, and image processing software, this imaging system uses CCD technology originally developed for ground and space astronomy where the highest possible sensitivity and photometric accuracies are required. The CCD 2200 is sensitive to light levels as low as one photon per pixel per minute, and with its high dynamic range, it can accept light levels as high as 109 photons per pixel per second. The dynamic range in a single exposure exceeds 100,000:1, and advanced cooling technology minimizes dark current in the detector. The system has proven applications in microscopy, spectroscopy, x-ray and electron beam imaging, immunoassay, and astronomy, but it can enhance any technique that uses light imaging. Microscience, 41 Accord Park Drive, Norwell, MA 02061; (617) 871-0308.



**Ultralow Light-Level Imaging System**

### **Particle Beam Interface for Magnetic Mass Spectrometers:**

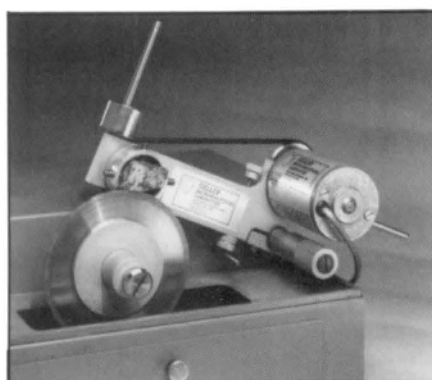
Two recently introduced ThermaBeam™ systems are now available for use on VG 7070 and Jeol AX, HX and SX high-resolution magnetic mass spectrometers. The interfaces optimize aerosol generation, desolvation, and momentum separation to efficiently introduce submicron particles of analyte into the ion source. Molecules never before analyzed in a gas-phase instrument can now be investigated using conventional ionization methods. Solvent vapors are removed during the momentum separation process so library searchable electron ionization (EI) and chemical ionization (CI) spectra using various reagent gases can be routinely collected. The ThermaBeam interfaces also feature a thermal, pneumatic aerosol generator. Extrel Corporation, 240 Alpha Drive, Box 11512, Pittsburgh, PA 15238; (412) 782-3884.



**Particle Beam Interface for Magnetic Mass Spectrometers**

### **Metallographic Saw Attachment:**

An attachment for the Buehler ISOMET or LECO VC-50 metallographic saw will enable users to section materials up to ten times faster, cut twice the thickness of material, provide a superior surface finish, and wafer materials to 0.004 inches thick by 1.5 inches o.d. Applications for the Counter-Rota-Cutter include sectioning high T<sub>c</sub> superconductor materials, opening ceramic ICs without contamination, and general metallography. Geller MicroAnalytical Laboratory, One Intercontinental Way, Peabody, MA 01960; (505) 535-5595.



**Metallographic Saw Attachment**

### **Computer-Controlled Voltage Calibration:**

The Josephson Array Voltage Standard system, a complete computer-controlled system, implements the NIST definition of the International Legal Volt, achieving traceability without the need to transport standards to NIST for calibration. The operator selects the desired array voltage level, and the computer controls the microwave frequency and acquires and processes all data. The array can generate any voltage in the -20 to 2.0 volt range with a resolution of 100 nV and an accuracy equal to that of the system time base. Principal components include a voltage standard cryoprobe, microwave hardware set, JBS-200A bias source, software, and a liquid helium dewar. RMC Cryosystems, 4400 South Santa Rita Avenue, Tucson, AZ 85714; (602) 889-7900.

### **Journal of Aerospace Composites:**

Bi-monthly technical trade magazine serves engineers, scientists, and managers involved in the design and manufacture of products utilizing composite materials. Contents include technical articles by composites engineers, and information prepared by engineering and technology editors. Cardiff Publishing Company, 6300 S. Syracuse Way, Suite 650, Englewood, CO 80111; (303) 220-0600.

### **Mass and Volume Calculator with a Materials Database:**

Software designed for easily making rapid weight estimates or detailed mass calculations first calculates the volume of an object, then displays its weight in any of the 700 materials in its database. Auxiliary functions include calculations when mass or volume is known, combined shapes, and a center of gravity function. Many of the calculations are useful for tasks other than weight calculations. Mass2 can perform metric to English conversions and accepts input in fractional, decimal, and exponential notation. Dempsey's Forge Software Division, Route 2, Box 407, Gladys, VA 24554; (804) 283-4602.

### **Cryogenic Accessories Catalog:**

Catalog combines technical product information and application notes in one convenient source. Included are current sources, digital thermometers, magnetic field Hall sensors, thermocouples, wires and coaxial cables, metal and tubing, vacuum components and assemblies, and a variety of other instrumentation and assembly accessories. Lake Shore Cryotronics, 64 East Walnut Street, Westerville, OH 43081; (614) 891-2243. □