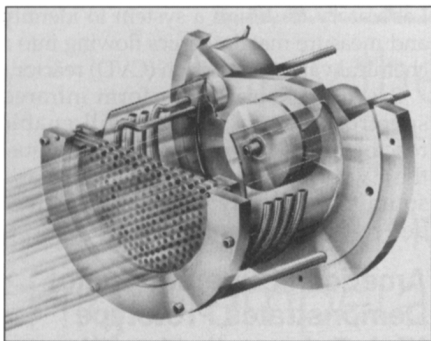


## RESOURCES

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



▲ **Filament-Free RF Ion Source:** Veeco Instruments' Microetch RIM-210 RF combines low-pressure collimated ion beam etching with inductively coupled RF plasma generation for dry-etch process capability. The device operates at 1.8 MHz frequency and generates a stable beam with reactive or inert gases, eliminating sputtering of the plasma chamber and providing clean operation. A three-grid transparent set of optics is used for collimation and high current densities, achieving uniformities of up to  $\pm 5\%$ . Applications include etching of a stack of materials such as ferroelectrics and metal electrode materials, and inert materials etching such as NiFe and ceramics for thin-film magnetic heads.

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▲ **Pulse Pre-amplifier-Discriminator:** Advanced Research Instruments' F-100T/E can process low-level pulses from a photomultiplier tube or electron multiplier by combining a preamplifier, a linear amplifier, and a single-channel analyzer used as a noise discriminator. Compatible with most ratemeter or counter/timer units, the hand-sized device can be placed adjacent to a detector to minimize noise. Sensitivity is 50–100  $\mu\text{V}$  for TTL or ECL output pulses, and the maximum pulse repetition rate for equally spaced pulses is 100 MHz. Applications include photon, electron, and ion counting, photomultiplier tube pulse processing, secondary ion mass spectroscopy, ion scattering spectroscopy, and x-ray.

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▲ **Digital Data Logger:** The stand-alone DataQuick digital recorder from H & N Instruments may be used as a strip chart recorder and can record collected data on a 3.5-in. or 5.25-in. diskette. Descriptive information and the collection schedule

are written onto a diskette using any IBM-compatible PC. After the diskette is inserted into the recorder, up to three analog dc signals in the millivolts to volts range are digitized and recorded, along with time following the requested collection schedule. After data collection, the diskette may be inserted into the PC and the data transferred as an ASCII file, which can then be imported for analysis and plotting.

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▲ **Thermally Conductive Epoxy:** Syon's TRU-CAST<sup>®</sup> 111 two-part epoxy adhesive offers a thermal conductivity of 6 BTU/ft<sup>2</sup>/hr/in/<sup>°</sup>F and a coefficient of thermal expansion of  $18 \times 10^{-6}$  in/in/<sup>°</sup>F. Free of solvents, the resin has a room-temperature cure time of 24 hours, and the cured product achieves 95 Shore D hardness. It is available in a two-part mixing and dispensing package, or in pints, quarts, or gallons.

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▲ **Inflatable Spill-Control Device:** The DrumRoll<sup>®</sup> from ILC Dover can stop 55-gallon-drum leaks that are up to 7" x 2" in size. To stop a leak, users wrap the device around the drum and pull the inflation cord. A CO<sub>2</sub> cartridge then inflates a chemically resistant Teflon-coated bladder which stops the leak. No tipping or pegging is required, and one person may operate the device alone. A reusable training kit includes a DrumRoll<sup>®</sup> that can be

used for up to 50 applications, 10 CO<sub>2</sub> cartridges, a training video, and a manual. A mounting bracket is also available.

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▲ **Time-of-Flight Mass Spectrometer:** Comstock's RTOF/210 offers computer-designed ion optics and a modular design that enables users to either purchase a complete system or configure a spectrometer according to experimental needs and existing equipment. Interchangeable sources using electron impact ionization or laser ionization are available, and options include a mounting station, digital storage oscilloscope or PC-based data system, vacuum pumps and controls, and pulsed molecular beam valve. Applications include experiments in surface analysis, ablation, desorption, gas phase analysis, multiphoton ionization, and molecular beam studies.

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▲ **Mechanical Drive Assemblies:** The KLMDA-S and KLMDA-L from Surface/Interface (S/I) extend the range of applications for S/I precision magnetic manipulators by allowing remote operation and computer control. The devices provide reproducible motion using stepper motors and computer control, or dc motors and interlock switches, and resistance to external forces such as overcoming gravitational problems in vertical applications. The KLMDA-S has a stroke less than 36"; the KLMDA-L has a stroke of 36" or more. Both devices can be horizontally or vertically mounted, and options include three limit switches, pulley drive motor mount, rotary drive attachment, dc motor and joystick, and more.

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▲ **Vacuum Chamber Design Software:** Free ChamberMaster<sup>™</sup> software from Huntington Laboratories is an automated 3-D drawing and design checking program that supports the development of both cylindrical and spherical chambers, or combinations of both. Users can view a simplified wire-frame format for evaluation and optimization of the chamber configuration, rotate and check the wire-frame image from any perspective, and make adjustments. A library of flange size alternatives is also included. When the wire-frame design is complete, users transmit the disk file to Huntington, which then returns a 3-D CAD drawing of the wire-frame subject, along with a price and delivery quotation.

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