

RESOURCES

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

Photocathode-Enhanced CCD Camera:

Photonic Science's extended ISIS camera features low-light-level operation in the blue-green part of the spectrum using an enhanced blue S20 photocathode specifically for fluorescence and luminescence microscopy. When reading out at TV rates, the camera captures faint images in one frame per wavelength for ratio imaging; its operating range, however, makes it useful for bright fluorescence studies. Photocathode sensitivity is more than 60 mA/W at 500 nm, and the intensifier gain is user variable over a 100:1 range, with a typical maximum luminous gain of 1,000,000.

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Stress Measurement Systems:

Veeco/Sloan Technology's stylus-based profilers can automatically calculate thin-film stress on semiconductor wafers, monitor deposition processes, and minimize stress. Two models use a stress algorithm to create a curve made up of stress values for each data point on the scan trace. They use the same linear-scan method as high-end surface profilers, enabling longer stress measurements free of geometric distortion. The standard model accommodates up to 5-in.-diameter wafers, with a maximum scan length of 30 mm; the other model accommodates up to 6-in.-diameter wafers, with scans of up to 500 mm and 8,000 data points per scan.

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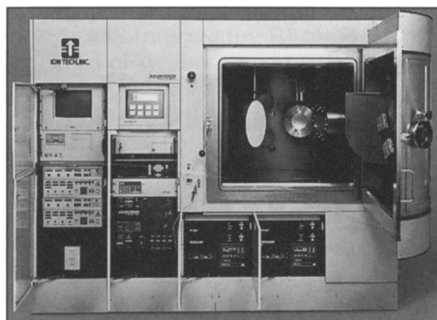
Thermal Conductivity Testers:

Laser-Comp's FOX heat flow meters allow rapid completion of tests to determine resistance of insulation materials—in 10 minutes for 1-in.-thick specimens. A temperature range of -20 to 100°C is achieved via heating/cooling plates, which adjust automatically to within ± 0.001 in.; extreme temperature settings may be reached within a few minutes. Instrument precision exceeds 1%, and the thin-film integrating heat-flux transducer offers 0.05% resolution. The instruments are suitable for slices of cellular plastics.

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Guide to DOE Labs: Free 120-page booklet describes more than 180 U.S. Department of Energy and government national lab facilities that conduct research and development of energy efficiency and renewable energy technologies. The listed facilities are available to industry and academia personnel. The guide describes each facility, provides details on user arrangements, and lists a contact for each facility. Indexes are included.

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Thin-Film Deposition Systems: Ion Tech's processing systems are capable of ion-beam or reactive etching, chemically assisted ion-beam etching, ion-beam-assisted deposition, and single or multi-layer ion-beam deposition. The systems may be automated, or operated manually, and are suitable for producing diamond-like carbon, complex alloys, high-precision optical films, and more. They are available in a standard design, or may be customized for features such as vacuum chamber design, target and substrate fixture configuration, and the number, position, and type of ion sources operating in the chamber.

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Extrusion Plastometer: The MF12 melt flow indexer from Custom Scientific Instruments can determine extrusion properties, check incoming materials, and characterize new polymers. An on-board computer ensures testing to meet ASTM D-1238, ISO 1133, and other standards. Menu-driven software facilitates sample test setup, data analysis, and storage of up to 50 tests and their test conditions. Automatic calculation of flow rate, shear rate, shear stress, and viscosity are displayed, and up to 32 units may be linked to a PC-compatible computer. The device features set-point temperature control within $\pm 0.1^\circ\text{C}$.

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Cleaning Solvent for Urethanes:

Dynaloy's Dynasolve CU-6 may be used for cleaning urethane residues and crystallized isocyanates from polyurethane processing equipment. The nonchlorinated, nonflammable, noncarcinogenic, and non-ozone-depleting solvent replaces solvents such as methylene chloride, acetone, MEK, and 1,1,1-trichloroethane. It dissolves all types of urethanes and is suitable for applications in which liquid isocyanates are present prior to or after cleaning. The solvent is recyclable via vacuum distillation.

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Atomic Force Microscopy for Fluids:

Digital Instruments' Tapping-Mode™, which is suitable for operation in fluids, may be used for nondestructive surface imaging of soft materials and provides subangstrom vertical resolution and nanometer lateral resolution. The system is appropriate for use in situations where samples are best imaged in native or near-native fluid environments or in preservation media such as alcohols or glutaraldehyde. Applications include samples such as DNA, DNA-protein complexes, chromosomes, RNA transferase, whole cells, and membranes.

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Microchannel Plates:

Galileo's Long-Life™ microchannel plates (MCPs) are available in three classifications. Detection-quality MCPs are suitable for time-of-flight mass spectrometry, residual gas analysis, and point detectors. Image-quality MCPs are designed for imaging or position-sensing applications, second-generation image intensifier tubes, ultrafast cathode ray tubes, and techniques such as ESCA, magnetic sector mass spectrometry, and VUV spectrometry. Premium-quality MCPs are designed for precision imaging applications such as high-speed photography and third-generation image intensifiers. A selection guide is available.

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Vacuum Inlet Traps: Posi-Trap™ vacuum foreline traps from MV Products may be customized for corrosive and abrasive processes by changing replaceable filter elements. The 4-in.-diameter model has 25-mm ports and uses one replaceable filter element; the 8-in. model has 40-mm ports and holds four elements. Replaceable filter elements include stainless steel and copper gauze to trap particles and condensed vapors, molecular sieves, activated charcoal, activated alumina, cellulose acetate, Sodalorb® to remove acids, and pleated polypropylene with 2-, 5-, and 20-micron porosity.

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UHV Reference Guide: Free 48-page catalog from Physical Electronics (PHI) features the PHI line of ion pumps and controls, and provides solutions to pumping problems such as hydrogen pumping, inert-gas pumping, and high gas loads. The guide includes eight nonevaporable getter options for ion pumps, pumping systems and options, and pressure-measuring devices such as ion gauge tubes.

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