

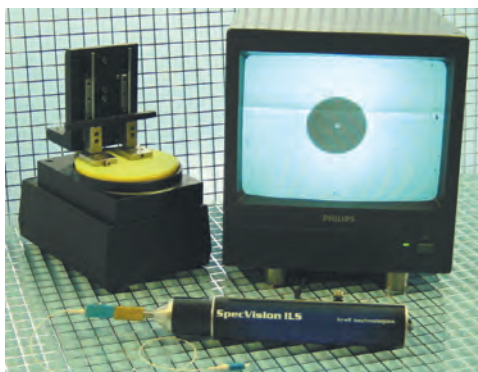
Reflective Coating

Acton Research has optimized its deep-ultraviolet (DUV) broadband Al + MgF₂ optical coating for increased reflectance at 193 nm. The #1900 coating operates throughout the ultraviolet and visible spectrum and provides $\geq 88\%$ reflectance at 193 nm. The coating's high performance provides significant benefit to manufacturers of semiconductor metrology equipment, as well as to users of other applications such as ellipsometry and thin-film measurement systems. The #1900 provides higher throughput because of its 10% improvement in spectral reflectance in the DUV, compared with a conventional broadband optical coating. The coating also can be applied to a variety of glass substrates available from Acton, or on materials that are supplied by customers, in prototype and original-equipment manufacturer quantities.

Acton Research Corp.
15 Discovery Way
Acton, MA 01720
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Fiberscope

Krell designed its new SpecVision ILS video-inspection fiberscope with ultralong working-distance optics for applications that require demanding visual inspection, such as fiber-optic connectors and compo-



ponents. The handheld ILS uses interchangeable adapters to view connectors on bulkheads and polished fixtures, and its flexible interface platform permits the analysis of cable assemblies, optical bundles, multi-fiber components, and medical specimens. Users can display high-resolution images on a computer monitor, and software is available to facilitate the archiving of data.

Krell Technologies, Inc.
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Vacuum Generators

Anver's redesigned line of air-powered, single-stage vacuum generators provides an



answer for companies seeking such devices for use on an intermittent basis. The company's low-cost, versatile JB series of vacuum generators have no internal moving parts and can achieve vacuum levels to 27 in. Hg. Their straight-through internal design reduces clogging, and they can be blown free to clear them. Users can control the JB series by a manual or automatic valve on the compressed-air line. The easily mounted vacuum generators have black anodized aluminum bodies and brass internal nozzles, and oper-

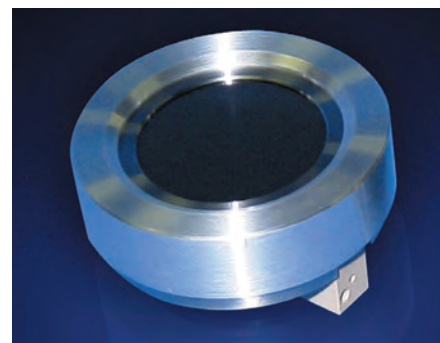
NEW PRODUCTS

ate at 72.5 psi on nonlubricated, 50- μ m-filtered air. JB pumps come in five standard sizes, from 0.76 to 1.34 in. outer diameter. Options include mufflers, control valves, four types of vacuum switches, gauges, suspension assemblies, and vacuum cups.

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TOF Detector

Burle has announced its enhanced, high-performance, 40-mm-diameter time-of-flight



detector for mass spectrometer applications, which features the company's small-pore 5- μ m Extended Dynamic Range microchannel-plate (MCP) technology and a 12.5-cm² collection area. The large area of collection and a 760-ps pulse width enables the new detector to provide previously unobtainable levels of mass resolution and dynamic range, as well as a detection sensitivity 10-fold that of conventional MCPs. The detector comes housed in Burle's Quick-Fit replaceable MCP cartridge, which includes two Chevron Long-Life small-pore MCPs and a high-voltage transmission grid mounted in a rugged module with an integral 50- Ω impedance-matched conical anode. The module is available separately or on a 6-in. Conflat flange.

Burle Electro-Optics, Inc.
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Cross-Section Polisher

JEOL's new cross-section polisher enables users to prepare clean, polished, large-area



cross sections of samples suitable for imaging with its line of scanning electron microscopes (SEMs). The compact, easy-to-use SM-09010 allows the observation of multiple-layer structures, interfaces, composites of soft and hard materials, polymers, powder grains, and crystalline structures of soft metals and ceramics with few artifacts. When preparing samples up to 11(w) × 10(d) × 2(h) mm, the polisher preserves internal structures, voids between interfaces, adhesions between layers, and precipitates, and it minimizes surface deformation, unlike mechanical polishers. The SM-09010 has applications in SEM imaging, energy-dispersive spectrometry, wavelength-dispersive spectrometry, and electron-backscattered diffraction analysis.

JEOL USA, Inc.
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Peabody, MA 01930
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Raman System

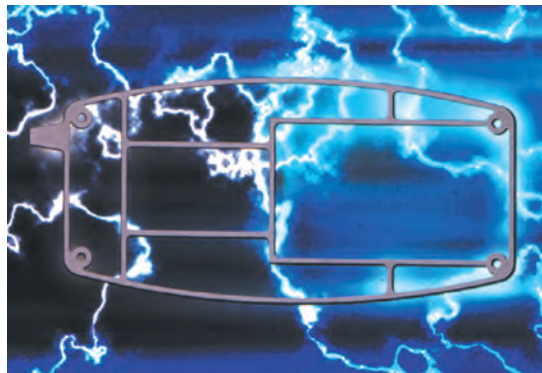
Thermo Electron's new NXR FT-Raman system is an innovative series of instruments that combine faster detectors and sampling automation to yield higher-throughput screening, primarily for chemists, materials

and forensic scientists, and process developers in pharmaceutical and polymer production. The NXR series' Genie germanium detectors deliver better speed, signal-to-noise ratio, and hold time, which allows high-speed scanning without compromising data quality. The NXR system also contains a unique MicroStage FT-Raman microscope that enables easy macro- and microsampling from the same stage, and the unit enables the efficient and accurate performance of high-end experiments.

Thermo Electron Corp.
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Waltham, MA 02454
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Etched Metals

Photofabrication Engineering manufactures a full line of custom photochemically etched metal components for original-



equipment manufacturers of communications and telecommunication products. The company's capabilities include reel-to-reel etching of many materials, including stainless steel, and it can provide custom-etched gaskets, electromagnetic-interference/radio-frequency shields, face plates, and screens. Photofabrication can etch materials in thicknesses from thin foil up to 0.09 in. (2.286 mm), and it can easily incorporate intricate patterns, geometries, and

graphics into the etched part, as well as apply all types of finishes. Photochemical etching allows greater tolerance control for elaborate parts than traditional manufacturing methods because the phototools do not wear.

Photofabrication Engineering, Inc.
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Sample Extraction

Ascend has brought to the high-tech marketplace an innovative technique designed to enhance transmission-electron-microscopy (TEM) sample extraction that the company calls Extreme Magic. It eliminates most of the difficult and time-consuming steps associated with focused-ion-beam-based (FIB) TEM sample preparation. Extreme Magic works with Ascend's Extreme

Access manipulator, and it provides scientists and engineers in semiconductor manufacturing and materials research a faster, more reliable way to prepare the site-specific, ultrathin samples (<100 nm) required for atomic-resolution TEM analysis. Because it significantly reduces the time and difficulty of TEM sample preparation, it provides increased reliability, throughput, and lower cost per analysis. Extreme Magic uses Ascend's nano-

engineered End Effector to extract relatively thick, site-specific samples, which the manipulator can position away from the bulk sample for final FIB thinning or quick-scanning TEM evaluations.

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Adhesive/Sealant

Master Bond's new two-component epoxy adhesive/sealant, designated EP34AN, provides users with a high-performance, room-temperature-curing compound with a high bonding strength to many substrates. EP34AN has a thermal conductivity of 22–24 BTU • in./ft² • h • °F, and the com-





New Products

Vacuum Pump

Ebara has introduced its newest line of vacuum pumps, which are designed to answer the semiconductor industry's demand for energy-saving, easily installed, and more-compact units that provide consistent pumping speeds at 50 or 60 Hz. Pumps in its new ESR series—for energy-saving roots—have a multistage-lobe design engineered for use in clean and medium-duty processes such as scanning electron microscopy, physical vapor

deposition, ashing, ion implantation, and etching. Pumping speeds range from 46 to 706 ft³/min, and the pumps provide a 60% reduction in space and power requirements compared with Ebara's A series and UERR model pumps.

Master Bond, Inc.
154 Hobart Street
Hackensack, NJ 07601
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Optical Domes

Meller's custom-fabricated, abrasion-resistant sapphire optical domes protect sensitive guidance systems, sensors, and other electronics from harsh environments with a clear cover second only in hardness to diamond. The domes transmit wavelengths from the ultraviolet to the infrared, and they provide up to 85% transmission uncoated and <0.25% reflection per surface when treated with an antireflective coating. The optical domes can be made in sizes from 0.5 to 6.0 in. outer diameter. They have a Moh 9 surface hardness, surface finishes to 20-10 scratch-dig per MIL-PRF-13830, and a wall thickness variation of <25 μm, and their 160° included-angles extend the viewing angle of electronic detectors and sensors exposed to fast moving sand, dirt, and water. Meller also supplies sapphire windows and lenses.

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Ebara Technologies, Inc.
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Doppler Vibrometer

MetroLaser's new single-beam laser-Doppler vibrometer provides high-sensitivity measurements of vibrations across a wide dynamic-measurement range of any surface. The VibroMet 500 is optimized for distances

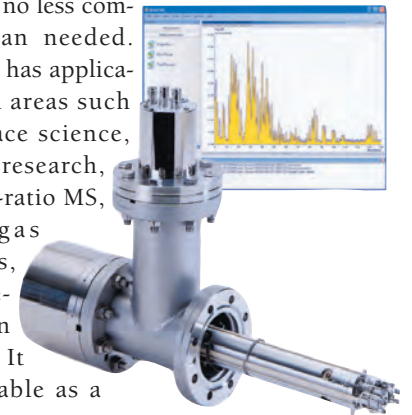
from 1 cm to 5 m, without the need to adjust a focusing lens or to treat surfaces. This capability makes MetroLaser's vibrometer easy to use and ensures quick and accurate measurements. The compact, rugged, and field-tested VibroMet 500 features point-and-measure operation and heterodyne detection for high measurement sensitivity, and it comes with a 12-month warranty.

MetroLaser, Inc.
2572 White Road
Irvine, CA 92614-6236
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Mass Spectrometer

Pfeiffer has introduced HiQuad, its new quadrupole mass spectrometer (MS) that comes with proven MS technology, the next generation of Quadera software, and a built-in Web server for remote operation. The instrument provides high measurement speeds of up to 0.125 ms/amu, and excellent sensitivity with a dynamic range up to 10 orders of magnitude. The new software permits users to make each analysis no more or no less complex than needed. HiQuad has applications in areas such as surface science, plasma research, isotope-ratio MS, trace-gas analysis, and desorption studies. It is available as a complete system or as components for those who build their own spectrometers.

Pfeiffer Vacuum, Inc.
24 Trafalgar Square
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