RESOURCES

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

Auto-Focusing Normal Incidence Monochromator: McPherson's Auto-Focusing NIM has a 1-m focal length and is optimized for work from 30 nm to the visible range with selected gratings. The astigmatic optical design uses a concave diffraction grating, and imaging is attained by using a small diffracted angle. The instrument is suitable for use with CCD or MCP focal-plane array detectors. The auto-focusing wavelength drive provides high resolution over the full operating range. Vacuum integrity is maintained with both the high-vacuum 10^{-7} and UHV 10^{-10} Torr versions. The NIM spectrometer is available in focal lengths of 1–6.65 m, with resolving powers of 100,000 at 45 nm. Contact: EDS@mcphersoninc.com; www.mcphersoninc.com.
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Electrical Standards and Products: The *2001 Electrical Standards and Products Guide* is available free from the National Electrical Manufacturers Association (NEMA). The Guide lists technical standards for the electro-industry and features an extensive list of manufacturers and their products. Contact: cat_lada@nema.org; www.global.ihs.com.
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High-Speed X-Ray Detector: The X'Celerator from Philips Analytical offers a 100-fold increase in recording speed for powder diffractometry with no compromise on resolution. A scan formerly requiring 3 h of data-collection time can be recorded in <2 min. The unit is mounted using the PreFIX interface, which facilitates exchange of optical components without realignment procedures. Contact: analytical.info@philips.com; www.analytical.philips.com.
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Split Flow Turbopump Technology: Pfeiffer Vacuum offers advanced Split Flow Turbopumps for analytical OEMs. These box-style Split Flow pumps feature up to three ports that can be configured to pumping requirements including multi-chamber LC-MS and GC-MS systems. The multiport design delivers high pumping speed, locates the port where it is needed, and defines the compression ratio between each port. Only one rotary-vane backing pump is necessary, resulting in space and cost savings. The small size of the vacuum package allows a small benchtop analytical system to be designed. Contact: msears@pfeiffer-vacuum.com; www.pfeiffer-vacuum.com.
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Nanoindenter System for 300-mm Wafers: The Nano Indenter® XPW from MTS Systems tests wafers of up to 300 mm in diameter. The system includes a complete operating and data-analysis software package. An optional vacuum mount system ensures that wafers remain in good condition for additional tests. The diamond indenter tip of the XPW is computer-controlled; indentations are made with a controlled force. The indentation depth is continuously monitored, providing data from which hardness of the test specimen, Young's modulus, fracture behavior, and other mechanical properties can be calculated. Contact: nano@mts.com; www.mts.com.
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Molecular-Beam-Deposition–LEED Instruments: Omicron's MBD–LEED, part of its SPECTALEED series of low-energy electron-diffraction instruments, provides *in situ* observation of thin-film growth during the evaporation process by integrating three Knudsen cells into the LEED optics. Minimum reduction of the viewing area is a key feature, and there is no disturbance of the LEED pattern. At a maximum cell temperature of 700°C, a low light emission is maintained. Each of the three Knudsen-cell quartz-glass crucibles is prealigned onto the sample and can be exchanged and refilled. Contact: info@omicronUS.com; www.omicron-instruments.com.
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Methyl Iodide Analyzer: The CH_3I-100 analyzer from IN USA monitors concentration levels of methyl iodide. The device uses a UV-absorption technique to continually measure ppm or percent levels of methyl iodide in the gas phase. The stable optical system reduces frequency of calibration, and the device features dual field-programmable alarms. The analyzer detects trace levels inside lines and equipment used to manufacture methyl iodide, indicating when the purge cycle is complete. Contact: info@inusacorp.com; www.inusacorp. com.
Circle No. 61 on Inside Back Cover.

Industrial-Grade DPSS Lasers: The PowerGator 532-15 from Lambda Physik delivers >13.5 W average power and up to 50 GW/cm^2 peak power intensities and microfabricates high-aspect-ratio features in hard materials >1 mm thick. Short 15-ns pulses and a wavelength of 532 nm (green) improve plasma penetration and reduce heat-induced effects, microcracking, and redeposition of material, yielding higher quality surfaces and features deeper than longer pulse green, UV, or IR systems. At a 10,000-Hz pulse rate, microfabrication production times exceed conventional electrochemical, electrical-discharge-machining, and UV-laser systems for feature sizes as small as 20 µm and thicknesses >1 mm. Contact: marcom@lambdaphysik.com; www.lambdaphysik.com.
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Software for Designing Experiments: Design-Ease 6.0 from Stat-Ease is an entry-level software package that helps users improve their product or process through the use of experimental design tools. The software presents an intuitive interface, an expanded help system, a variety of designs, and the flexibility to modify designs, as well as graphics to simplify interpretation and useful evaluation capabilities. Featured are standard two-level and fractional factorials, general factorials, high-resolution fractions, Taguchi orthogonal arrays, and Plackett–Burman designs. Significant effects are revealed with half-normal or normal probability plots. Contact: info@statease.com; www.statease.com.
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For further information for these products, check www.mrs.org/publications/bulletin/resources

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