

RESOURCES

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

Laser Measurement System: The LIMTEK from Davidson Optronics provides dimensional metrology calibrations, internal multi-axis measurements, and high-speed dynamic analysis. The PC-controlled modular system features certified laser wavelength, synchronous measurement in up to three axes, an automatic environmental compensation unit, and miniature optics for x/y table positioning. A CCD camera ensures accurate straightness, squareness, and parallelism measurements, and straightness deviations in two directions are measured simultaneously with position. Math, statistical, and FFT functions are available. Contact: sales@davidsonoptronics.com.

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Synthetically Produced Sapphire: Goodfellow produces single-crystal sapphire in sheets ranging in thickness from 0.10 mm to 6.35 mm. Also available are 0.11-mm-diameter monofilament, rods 2.0 mm and 4.0 mm in diameter, and polished spheres of 0.5 mm to 6 mm in diameter. A transparent material with favorable transmission of wavelengths in the range of 0.2–5.5 μm , sapphire provides high thermal conductivity, volume resistivity, hardness, and wear resistance, as well as high upper use temperature. Contact: info@goodfellow.com; www.goodfellow.com.

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Nondestructive, Soft-Sample AFM Imaging: Asylum Research's Q-Control Module hardware accessory for NanoScope[®] scanning-probe microscopes from Digital Instruments allows gentle and less destructive imaging of sensitive samples than previously available. By applying Q-Control, delicate and sensitive surface structures observable with a standard scanning-probe microscope can be characterized with high resolution. Contact: roger@asylumresearch.com; www.AsylumResearch.com.

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Electron Gun Supply: The EGM50 from Spellman High Voltage Electronics provides 15 W of output power, with stability, ripple, and noise factors of <2.5 ppm. The unit incorporates a floating filament power supply and a floating active bias system that assures high-precision beam emission control. The EGM50 is suitable for electron-beam lithography for photomask fabrication, direct electron-beam lithography on silicon wafers, in-line wafer inspection systems, and SEM systems. Contact: sales@spellmanhv.com; www.spellmanhv.com.

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Dual Precision Ratemeter/Photon Counter: The PRM-400 from Advanced Research Instruments features a fast counter/timer ratemeter (500 MHz), 40 bit deep counters, counting on every pulse (no prescaling), gated inputs, and a dual counter for background subtraction. Because of alternating counters, zero dead time occurs. The instrument accepts standard TTL, NIM, and ECL inputs. Applications include photon counting, ion and mass spectroscopy, and surface analysis. Contact: aricorp@aricorp.com; www.aricorp.com.

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Powder Diffraction System: The X'TRA from Applied Research Laboratories is built around a vertical θ - θ goniometer that features removable dual Soller slits and continuous variable micrometer-controlled slits for adjusting the width of both the incident and diffracted beams. In the low-angle region, peaks can be observed down to 0.5°. Modular configuration allows use of various sample stages. The instrument can be equipped with a peltier-cooled Si(Li) solid-state detector tuned for high count rate to minimize coincidence loss. K-Beta and fluorescence radiation are removed, eliminating the need for filters and monochromators. Contact: marketing@arl.ch; www.arl.ch.

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Multi-Reactor System for Parallel Synthesis: The MultiMax^{IR™} from ASI Applied Systems is an automated multi-reactor system for parallel synthesis. It incorporates *in situ* FTIR spectroscopy to provide real-time analysis of the reaction progress in each vessel. The three major submodules include a four-vessel (expandable to 16 vessels) reactor block with automated reagent dosing, independent stirring, and temperature control; Tiara[™] optics for multipoint analysis of reaction vessels via a stepper-motor-driven optical conduit that sequentially transports the IR light beam to each of the diamond ATR-equipped reaction vessels; and a ReactIR[™] FTIR reaction analyzer. Contact: asisupport@asirxn.com; www.asirxn.com.

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Batch-Testing Software: AMETEK's Batch Tester software is an automated testing utility that uses the bar-code reader facility to reduce set-up time and allows for automated operations at the front line of production by responding to alternate external signals. The software accompanies Version 4.0 of Ametek Lloyd Instruments' Nexygen[™] software, a materials-testing control and data-analysis package. Online messages automatically alert users when pre-defined tests exceed critical fail limits. When tests are complete, data is stored in files before automatically producing reports in user-chosen formats. Contact: general@lloyd-instruments.co.uk; www.lloyd-instruments.co.uk.

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Turbopump with Integrated Controller: Pfeiffer Vacuum's TPH 2101 provides high-capacity pumping (1900 l/s for N₂) and is suitable for high-density plasma CVD or reactive ion etching. Users customize vacuum processes with "plug and play" capability by adding pump peripherals. The integrated controller facilitates cable connections to peripheral devices that control venting, interlocking backing pump control, and heat. Contact: contact@pfeiffer-vacuum.com; www.pfeiffer-vacuum.com.

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High-Power UV Laser with Quasi-CW Output: Spectra-Physics' Vanguard[™] solid-state laser provides more than 4 W of quasi-CW output at 355 nm. The commercial laser uses saturable Bragg reflector (SBR) technology. The frequency-tripled Nd:YVO₄ laser has a pulse repetition rate of 80 MHz and pulse duration of 10 ps, based on the FCbar[™] diode-pumping design. Intended for demanding OEM applications, the laser features TEM₀₀ output with excellent beam-pointing characteristics and industrial packaging. Contact: bgalver@splasers.com; www.spectra-physics.com.

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Dispensers and Metering Pumps: Fluid Metering's 30-page catalog features a variety of valveless dispensers and metering pumps. Included is information about pump heads and drives that can deliver flows from microliters to 4600 ml/min with pressures up to 100 psig. The catalog also details operating principles, pump capacities, materials of construction, and drive specifications, as well as a convenient fold-out pump selection guide and pricing. Contact: pumps@fmipump.com; www.fluidmetering.com.

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For further contact information for these products, check www.mrs.org/publications/bulletin/resources