

Focus on test and measurement **FREE**

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Focus on test and measurement

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Triple quadrupole ICP-MS

Agilent Technologies has launched its new 8800 triple quadrupole inductively coupled plasma (ICP-QQQ) mass spectrometer (MS). According to the company, the device offers improved performance compared with single quadrupole ICP-MS and provides tandem MS operation for controlled and consistent interference removal during the reaction. It also addresses high-end application requirements and offers flexible analysis capabilities unavailable on single quadrupole machines. The QQQ configuration of the Agilent 8800 controls the ions that enter the collision/reaction cell, so the reaction conditions remain consistent and predictable even if the sample composition changes. The instrument can also be set up to operate like a single quadrupole ICP-MS, offering the option of replicating existing and familiar methodologies. It analyzes problematic elements in samples across a range of applications. For example, the Agilent 8800 can provide ultratrace analysis of elements that encounter interferences in such high-purity samples as germanium and arsenic in hydrogen chloride and vanadium and titanium in sulfuric acid, and it can perform quantitative analysis of sulfur and phosphorus in DNA and protein/peptides for life sciences applications. *Agilent Technologies Inc, 5301 Stevens Creek Boulevard, Santa Clara, CA 95051, <http://www.agilent.com>*

Sound and vibration measurement software

The latest version of National Instruments' Sound and Vibration Measurement Suite 2011 software provides a comprehensive collection of analysis and signal processing tools for noise, vibration, and harshness testing, machine condition monitoring, and audio test applications. Scientists and engineers can use the suite as standalone software

or combine it with the company's hardware and LabVIEW system design software to simplify test system development and control. The suite has several new features to achieve that simplification; they include a ready-to-run data-logging virtual instrument that allows users to save data continuously with such specific criteria as temporal triggers. Users can configure the data logger and run it as long as necessary for various sensor types, including accelerometer, tachometer, and proximity probes. *National Instruments Corporation, 11500 North Mopac Expressway, Austin, TX 78759, <http://www.ni.com>*

High-voltage rejection isolation instruments

Data Translation has added two new ultra-high-isolation Ethernet measurement instruments, the DT8875 and the DT8876, to its MEASURpoint product line. The company's ISO-Channel design provides up to ± 3500 -V high-voltage rejection using galvanic isolation techniques to preserve small signals generated from thermocouples, resistance temperature detectors, and other sensitive sensors in harsh, high-voltage noise environments. Wind, gas, battery, and solar energy installations are among the applications in which high-isolation protection is required to ensure data acquisition integrity in noisy and often remote settings. Key design features include high-isolation-to-earth ground, with ± 1400 V continuously or 2500 V for transients (DT8875) and ± 3500 V continuously or 5000 V for transients (DT8876); channel-to-channel isolation of 2800 V (DT8875) and 7000 V (DT8876); high stability, 24-bit resolution, and a delta sigma analog-to-digital converter for each channel; and up to 40 simultaneous differential inputs (DT8875) and 20 simultaneous differential inputs (DT8876). *Data Translation Inc, 100 Locke Drive, Marlboro, MA 01752-1192, <http://www.datatranslation.com>*

Multifunction thermal detector

The BeamTrack 3A-QUAD high-sensitivity thermal detector manufactured by the Ophir Photonics Group combines power, energy, and position in a single compact laser sensor. It accurately measures power from 100 μ W to 3 W and energy from 20 μ J to 2 J and tracks beam position down to 0.1 mm. That combination provides increased measurement accuracy for high-sensitivity applications in which it can be difficult to center laser beams on sensors that have small apertures and recessed surfaces. The integrated beam position measurement function also allows beam-wander tracking as the beam drifts from its initial position. The 3A-QUAD has a small 9.5-mm aperture and measures over a broad spectral range from 190 nm to 20 μ m. BeamTrack sensors divide the sensor signal into quadrants and measures and compares the output to determine the position of the center of the beam to a high degree of accuracy. The sensor operates with the company's Nova II and Vega smart displays and Juno PC interface. *Ophir-Spiricon LLC, 3050 North 300 West, North Logan, UT 84341, <http://www.ophiropt.com>*

Bolt-on SIMS/SNMS facility

Hidden has introduced the EQS bolt-on secondary-ion mass spectrometry probe, which enables a complete SIMS facility to be added to diverse analytical ultra-high-vacuum surface analysis facilities. It also offers an integrated secondary neutral mass spectroscopy (SNMS) mode, thereby providing combined sputtered neutral mass spectroscopy and SIMS. Those dual techniques help measure optical and metallurgical coatings, alloys, corrosion layers, and architectural coatings. They enable direct quantification of concentration over the full range from trace level to 100%. The high-transparency electron impact ionizer at the probe's immediate entry region ensures efficient ionization of sputtered neutrals and optimum transmission efficiency for secondary ions. Both SIMS and SNMS can be combined throughout a continuous measurement sequence to provide quantified depth profiling data through a wide concentration range. The full product range includes both gas and metal-sourced ion guns. Both the probe and the ion guns require a

chamber-mounting port diameter of just 38 mm (1.5 inches). *Hidden Analytical*, 420 Europa Boulevard, Gemini Business Park, Warrington, WA5 7UN, UK, <http://www.hiddenanalytical.com>

Ultrasonic flowmeter

The Omega FDT-21 ultrasonic flowmeter is designed to measure the fluid velocity of liquid in a full, closed pipe. According to the company, the handheld measurement system is easy to install and use. The FDT-21 operates on the principle of measuring differences in the ultrasound transit time-of-flight. Electroacoustic transducers vertically placed at both sides of the pipe being tested receive and emit brief ultrasonic pulses through the pipe liquid. Sensors are placed on the pipe and fastened with a clamp. The flowmeter determines the velocity by measuring the travel time of a pulse from one transducer to the next. Flow in the same direction takes less time to travel to the second



transducer than does flow in the opposite direction. The display quickly shows the flow velocity. The FDT-21 can be used for metallic, plastic, and rubber tubes. *Omega Engineering Inc*, One Omega Drive, P. O. Box 4047, Stamford, CT 06907-0047, <http://www.omega.com>

Spectroscopic ellipsometer

Ulvac Technologies has introduced the UNECS-2000 spectroscopic ellipsometer for the high-speed measurement of film thickness and optical constants of thin films. According to the company, the compact instrument eliminates the need for conventional methods that mechanically or electrically control polarization devices. It takes advantage of the spectra obtained from the polarization interference occurring between two high-order phase shifters to instantaneously capture the wavelength distribution of the sample's spectroscopic polarization parameters. The UNECS-2000 has small emitter and sensor heads, and it includes a built-in light source and controller. The motor stage can handle samples up to 200 mm in di-

ameter. Using parallel measurement, the instrument can simultaneously determine the thicknesses of up to six individual film layers. It comes with computer control and analysis software. The company has also recently introduced the UNECS-3000A spectroscopic ellipsometer, which combines the ultrafast measuring capabilities of the UNECS-2000 with an automated mapping function that can handle 300-mm substrates. It can be used for evaluating resist film thickness for semiconductor lithography and organic electroluminescent display film. *Ulvac Technologies Inc*, 401 Griffin Brook Drive, Methuen, MA 01844, <http://www.ulvac.com>

Combustion gas analyzer

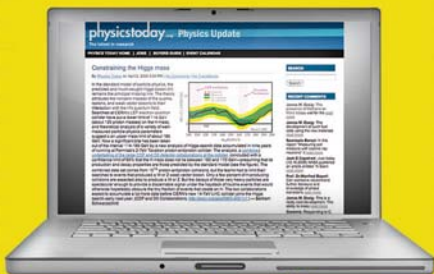
Bruker has launched the advanced G4 Icarus version C-HF, a new metals combustion gas analyzer designed for rapid and precise carbon measurements in metal casting and heat treatment applications. According to the company, the instrument will simplify carburization shim stocks, cast iron, and other carbon applications. With user feedback in mind, Bruker designed the analyzer to

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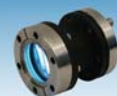
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eliminate many time-consuming maintenance requirements found in other combustion gas analyzers. A proprietary furnace reduces unwanted combustion byproducts such as splatter against interior furnace components. The filter system, accessible without tools, is positioned behind a transparent enclosure for convenient monitoring. In addition, the combustion process and quartz tube integrity can be observed via a furnace viewing port. Those innovations can potentially reduce instrument downtime and improve sample throughput. *Bruker AXS Inc, 5465 East Cheryl Parkway, Madison, WI 53711-5373, <http://www.bruker-axs.com>*

Multifunctional metrology system

Taylor Hobson, part of the Ultra Precision Technologies division of Ametek, now offers the Talyrond 500 series, a metrology instrument that can perform three core measurements—roundness, form, and surface finish—on a single platform. The measurements previously required three separate instruments; Taylor Hobson's new system can potentially save users both time and money that would be needed for equipment outlays. The measurement resolution of the Talyrond 500 is 0.3 nm. The instrument uses rotary, vertical, and horizontal measuring data to duplicate a machine tool's movement and exactly reproduce the work piece shape. The simulation of a cutting tool path allows for precise control of a manufacturing process. The Talyrond 500 is suited for a wide range of high-accuracy measuring applications, including precision bearings, fuel injectors, crankshafts, and turbocharger parts. The new series also offers a comprehensive range of standard and specialized accessories to accommodate many applications. *Ametek Inc, 1100 Cassatt Road, P. O. Box 1764, Berwyn, PA 19312, <http://www.ametek.com>*

Fiber-optic Raman probe

Capable of delivering the performance of a larger Raman probe, B&W Tek's new BAC200 is a fiber-optic Raman probe that has a diameter of less than 4 mm and enhanced optical collection power. The instrument's design enables both immersion and direct contact measurements and allows for applications previously not possible with standard Raman probes. It is scratch resistant and easy to clean because the fused silica tip is housed in a stainless steel needle tube. Unlike other commercially available lensed fiber-optic probes, the optical elements in the BAC200 are permanently fixed in alignment, with no possibility of movement from impact or vibrations. The working distance from the probe's face can range from 0 to 2.5 mm. The small size, flexibility, and durability of the BAC200 make it suitable for analyzing small sample sizes for biological and biomedical applications. *B&W Tek Inc, 19 Shea Way, Newark, DE 19713, <http://www.bwtek.com>*

Quality inspection of solar simulators

Ocean Optics has introduced an optical system for absolute irradiance measurements of solar simulators and other radiant sources. The RaySphere enables measurement of absolute irradiance ($\text{mW}/\text{cm}^2/\text{nm}$) over various spectral ranges from the UV to the near-IR (380–1700 nm). It may be especially useful for solar simulator manufacturers and R&D laboratories as a tool to validate the output of installed solar flash lamps. The illuminator (flasher) of a solar simulator is used in the photovoltaic manufacturing process for the binning of cells according to their spectral response and for final PV module efficiency measurements. The RaySphere provides a system with the accuracy and resolution needed to measure and analyze the performance and stability of the flasher. Calibrated to ensure accurate detection, the RaySphere allows evaluation and qualification of the spectral distribution of solar flashers and simulators. The company designed its instrument based on the norms established by standards-setting bodies such as ASTM International and the International Electrotechnical Commission (IEC 60904-9 2007). *Ocean Optics Inc, 830 Douglas Avenue, Dunedin, FL 34698, <http://www.OceanOptics.com>*

Kinetic microspectrometer

Craic Technologies has added kinetic spectroscopy capabilities to its 20/20 Perfect Vision UV-visible-near-IR microspectrophotometer. With the kinetic spectroscopy package, the system is able to monitor the full range spectra of a microscopic sample area over time and plot the results. Sample analysis can be done by absorbance, reflectance, and even optical emission from the deep UV to far into the near-IR spectral regions, all over a range of time periods. Applications include biological time-resolved analysis, measurement of the degradation of LEDs over time, and chemical reactions on metallic films. The kinetic microspectroscopy feature allows the creation of 3D maps in which x and y are the spectrum and z is the time domain. *Craic Technologies Inc, 948 North Amelia Avenue, San Dimas, CA 91773, <http://www.microspectra.com>*

New literature

Test and measurement product catalog

AR RF/Microwave Instrumentation has unveiled its latest product catalog, now available on a CD and in hard copy. Significant innovations and the company's core products—amplifiers, amplifier systems, complete electromagnetic compatibility (EMC) testing solutions, antennas, field probes, and more—are included in *The Complete Catalog for RF and EMC Testing*. The CD provides a comprehensive overview of AR products, including data sheets, application notes, advertisements, press releases, EMC equations and conversion charts, and the company's new full-line catalog. The hard copy version features AR RF/Microwave Instrumentation products and sections about AR Modular RF, AR Receiver Systems, and AR Europe. A copy of the AR catalog or the CD may be requested free of charge from <http://www.arworld.us/html/02000.asp>. *AR RF/Microwave Instrumentation, 160 School House Road, Souderton, PA 18964-9990, <http://www.arworld.us>* ■

