

NEW PRODUCTS

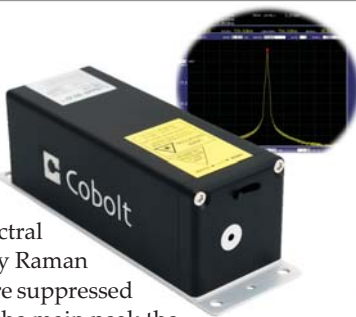
Focus on analytical equipment, sensors, and instrumentation

The descriptions of the new products listed in this section are based on information supplied to us by the manufacturers. PHYSICS TODAY can assume no responsibility for their accuracy. For more information about a particular product, visit the website at the end of the product description. For all new products submissions, please send to ptpub@aip.org.

Andreas Mandelis

Laser for Raman applications

Hübner Photonics has introduced the model 08-NLDM 785 nm ESP to the Cobolt 08-01 series of high-performance, single-frequency, narrow-linewidth lasers. The 08-01 series covers the broad 405–1064 nm range for high-resolution Raman processes. ESP, which stands for enhanced spectral purity, is particularly beneficial for low-frequency Raman applications. It defines how well the side modes are suppressed relative to the main laser peak and how close to the main peak the level of side-mode suppression is. Thanks to a patent-pending optical design, the spectral purity of the 08-NLDM 785 nm ESP is greater than 60 dB as close as 0.3 nm from the main peak. The multi-transverse-mode laser has an output power of less than 400 mW with fully integrated electronics in a single compact, hermetically sealed package. *Hübner Photonics Inc, 2635 N First St, Ste 228, San Jose, CA 95134, www.coboltlasers.com*



Mixed-mode option for digitizers and AWGs

An optional module for Spectrum Instrumentation's latest 16-bit digitizers and arbitrary waveform generators (AWGs) adds 16 synchronous digital lines to the analog data. Combined with the four multipurpose XIO lines already standard on those digitizer and AWG cards, the module offers, in total, 20 fully programmable XIO lines. The lines can run as synchronous digital inputs for a digitizer, synchronous digital outputs for an AWG, or asynchronous input and output lines, status lines, or additional trigger inputs. The modules fit on the 16-bit digitizers of Spectrum's M2p.59xx series, which offers 20 different PCIe cards with 1–8 channels and 20–125 MS/s. They also fit on the 16-bit AWGs of the M2p.65xx series, which consists of 8 PCIe cards with 1–8 channels and the choice of 40 MS/s or 125 MS/s. *Spectrum Instrumentation Corp, 401 Hackensack Ave, 4th Fl, Hackensack, NJ 07601, <https://spectrum-instrumentation.com>*



Real-time cell analyzer

According to Agilent, its multimode real-time cell analyzer (RTCA) is the first of its kind: It combines non-invasive biosensor measurement with live-cell imaging to deliver deep insight into cellular function. The xCELLigence RTCA eSight continuously monitors cells at predefined temporal resolutions for days or weeks, in a well-controlled, physiologically relevant environment. It provides label-free, real-time biosensor measurements and kinetic imaging of the same live-cell populations independently or simultaneously and monitors cell health, adhesion, morphology, proliferation, and cytolysis in primary or native cells alone or in co-culture. The analyzer supports three fluorescence channels, various well-plate formats and reporter reagents, and flexible user-defined schedules. It reads a 96-well plate in 15 s. *Agilent Technologies Inc, 5301 Stevens Creek Blvd, Santa Clara, CA 95051, www.agilent.com*

Fluorescence spectrometer add-on

PicoQuant has launched the FluoMic add-on for its FluoTime 300 time-resolved fluorescence spectrometer. The add-on enhances the FluoTime 300's accessibility and versatility by allowing users to perform spectroscopy on samples located outside the spectrometer. The FluoMic is easy to operate as it does not require lengthy alignment or coupling procedures. Using a special microscope coupler unit, the FluoMic's prealigned fibers guide excitation light from both pulsed and steady-state spectrometer sources to a microscope, such as the Olympus BX43. Emission is collected from a small sample area (down to 2 μm spatial resolution) and sent via a fiber to the detection arm of the FluoTime 300. The FluoMic add-on easily extends the state-of-the-art spectrometer's spatial resolution so the instrument can be used for performing a wide variety of steady-state and time-resolved measurements. *PicoQuant, Rudower Chaussee 29, 12489 Berlin, Germany, www.picoquant.com*



NEW PRODUCTS



Low-current, high-capacitance measurements

Tektronix has produced two source measure unit (SMU) modules for the Keithley 4200A-SCS parameter analyzer. The 4201-SMU and 4211-SMU modules can perform low-current measurements even in the presence of high load capacitance caused by long cables and complex test setups. Excessively high test-connection capacitance can make low-current measurements unstable. Because the new modules can function with longer cables or more connection capacitance than traditional SMUs, they can save researchers and test engineers the time and cost of troubleshooting and reconfiguring test setups. At the lowest supported current-measurement range, the 4201-SMU and 4211-SMU can source into and measure a

system that is 1000 times as capacitive as what is currently possible. **Tektronix Inc**, 14150 SW Karl Braun Dr, PO Box 500, Beaverton, OR 97077, www.tek.com

High-frequency emissions receivers

Keysight has extended its N9048B PXE electromagnetic interference (EMI) receiver from 26.5 GHz to 44 GHz. The PXE EMI receiver has the sensitivity to detect small signals close to the noise level—common in electromagnetic compatibility testing—so users can identify unwanted emissions caused by their devices and ensure they comply with worldwide and regional standards. Its time domain scan (TDS) and accelerated TDS capabilities meet dwell measurement requirements and reduce receiver scan and test time from hours to seconds. The device offers full signal visibility, where the real-time scan provides gapless signal capture and analysis in up to 350 MHz bandwidth and simultaneously displays the frequency domain, time domain, and spectrogram. **Keysight Technologies Inc**, 1400 Fountaingrove Pkwy, Santa Rosa, CA 95403-1738, www.keysight.com



QUANTUM COMMUNICATIONS POSTDOC

Los Alamos National Laboratory is a multidisciplinary research institution engaged in science and engineering on behalf of national security. The Quantum Communications Science team is seeking highly skilled and motivated postdoctoral researchers to work on several projects in the field of quantum information systems. Requirements include a Ph.D. in Physics, Computer Science, Mathematics or related field within the past five years (or soon to be completed) and substantial theoretical research experience in fields applicable to quantum physics, quantum information theory, quantum thermodynamics and information protocol.

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PHYSICS TODAY

Multispectral research spectrometer

Bruker has expanded its Invenio Fourier Transform IR R&D platform by launching its Invenio X system for research in molecular spectroscopy. The intuitive, modular spectrometer retains features of the original Invenio platform, such as FM functionality for simultaneous mid- and far-IR spectroscopy, and offers new advanced capabilities. The Invenio X is available with an automated three-position beamsplitter changer, and its novel, wear-free Integral interferometer combines high spectral resolution of less than 0.09 cm^{-1} with the accuracy of cube-corner mirrors. The highly automated, multispectral spectrometer features up to seven software-controlled detectors and multiple light-source options. Users can measure from the far-IR to the UV and visible range without needing to exchange optical components manually. **Bruker Corporation**, 40 Manning Rd, Billerica, MA 01821, www.bruker.com



Microscope for atomic tomography

Ametek Cameca has unveiled its Eikos-UV atom-probe microscope. It uses standard microscopy sample-preparation methods to deliver nanoscale structural information to materials researchers and product developers. According to the company, it is both easy to use and economical. The

base Eikos system, which incorporates a reflectron spectrometer design with a voltage-pulsing setup, ensures high data quality for metallurgical applications. It is field-upgradable to the Eikos-UV, which adds an integrated, automated laser-pulsing module with a computer-controlled focused-spot design. The Eikos-UV provides higher signal-to-noise ratio and access to a larger application range, including metals, semiconductors, minerals, functional and nuclear structural materials, thin films, and coatings. **Cameca Instruments Inc**, 5470 Nobel Dr, Madison, WI 53711, www.cameca.com

Test and measurement app

Liquid Instruments has updated the iPad app for its all-in-one Moku:Lab platform for test and measurement. Users of version 1.9 can sort, filter, and mark devices as favorites on the device-selection screen. Signal-fidelity improvements have been made in the spectrum analyzer and frequency response analyzer. The Moku:Phasemeter can now show frequency and amplitude values simultaneously, and reference traces can be displayed in the Phasemeter and all embedded oscilloscopes. Optimizations have improved the app's performance and responsiveness on older iPad models. The new version also fixes bugs and provides enhanced stability and interface upgrades. **Liquid Instruments**, 740 Lomas Santa Fe Dr, Ste 102, Solana Beach, CA 92075, www.liquidinstruments.com



Van der Pauw and Hall coefficient measurements

Quantum Design's van der Pauw-Hall option expands the transport capabilities of its physical property measurement system (PPMS) family of instruments. The van der Pauw technique allows for the determination of a material's resistivity for a uniformly thick sample of arbitrary shape. The van der Pauw-Hall option, which enables the efficient measurement of both the van der Pauw resistivity and the Hall coefficient, automatically measures and averages multiple unique permutations of the current and voltage leads, and it yields highly accurate resistivity measurements as a function of temperature or magnetic field. With the application of sufficiently strong magnetic fields, the same switching and measurement hardware can further be leveraged to acquire the Hall coefficient and charge-carrier concentration. Once both the resistivity and the Hall coefficient are known, the carrier mobility μ is readily calculated as a function of temperature across the full PPMS range. **Quantum Design**, 10307 Pacific Center Ct, San Diego, CA 92121, www.qdusa.com



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