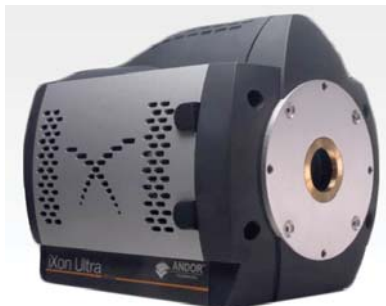


NEW PRODUCTS

Focus on lasers, imaging, and photonics

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 Rnanna@aip.org.

Andreas Mandelis



Superresolution camera for fluorescence microscopy

Andor Technology, an Oxford Instruments company, has made a superresolution microscopy technology available on its single-photon-sensitive iXon electron-multiplying (EM) CCD cameras. Superresolution radial fluctuations (SRRF)-Stream uses conventional fluorophores at low-illumination intensities to make possible

real-time superresolution fluorescence microscopy on most modern microscopes. Andor claims it has enhanced the technology to run optimally on its iXon EMCCD cameras and provide powerful superresolution at low cost. Advanced graphics-processing-unit optimization techniques execute the SRRF algorithm up to 30 times as fast as the existing SRRF implementation, and the camera produces real-time, high-resolution, large field-of-view live-cell images. **Andor USA**, 425 Sullivan Ave, Ste 3, South Windsor, CT 06074, www.andor.com



Circular dichroism microplate reader

Hinds Instruments has announced a circular dichroism (CD) microplate reader and named Bio-Logic Science Instruments its worldwide distributor. According to Hinds, it is the first commercially available system that can read CD directly from standard laboratory microwell plates. It facilitates investigating the properties of enantiomers—organic molecules that exist in at least two forms that are mirror images of each other. Increasingly, the Food and Drug Administration and other agencies require drug companies to fully separate, characterize, and control enantiomers. The novel CD spectroscopy instrument can measure the enantiomeric excess of 96 reaction products in less than 2 min and provide high-throughput screening for chiral pharmaceuticals. **Hinds Instruments Inc**, 7245 NE Evergreen Pkwy, Hillsboro, OR 97124, www.hindsinstruments.com

Instrument combines Raman and FE-SEM



WITec's correlative Raman imaging and scanning electron (RISE) microscopy is now available with the Zeiss Sigma 300 field-emission scanning electron microscope (FE-SEM). The Raman technique can identify and image the molecular composition of a sample. It is a suitable complement to an FE-SEM, which enables structural characterization of particles, surfaces, and nanostructures. The system features a standard vacuum chamber, a SEM column, and a confocal Raman microscope and spectrometer. The software facilitates switching between modes and transforming Raman spectroscopic data so they can be overlaid onto the SEM image to produce a RISE image. The approach can benefit researchers in nanotechnology, life sciences, geosciences, pharmaceuticals, materials research, and other fields. **Carl Zeiss Microscopy LLC**, 1 Corporation Way, Peabody, MA 01960, www.zeiss.com

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LT-APO objective



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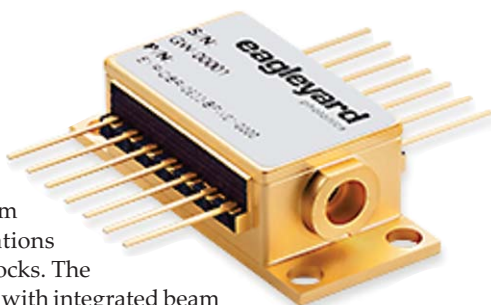
Deep-UV spectrum measurements

McPherson's VUVAS UV spectrophotometer systems can now be equipped with integrated digital mass flow controls (MFCs) that can improve measurement accuracy and the lifetime of short-wavelength UV lamps. The high energy of UV light can cause organic contaminants to photo-polymerize on optical surfaces and degrade performance. To reduce or eliminate photochemical deposition of organic films in UV instruments, measurements can be made under an inert gas atmosphere—typically nitrogen—rather than in vacuum. McPherson claims that digital control of the purge environment in UV optical systems such as its VUVAS spectrophotometers delivers more stable and reproducible results than can be achieved without the MFCs, which offer precise thermal sensing and accurate flow rate control. **McPherson**, 7-A Stuart Rd, Chelmsford, MA 01824-4107, <http://mcphersoninc.com>



Laser diode for rubidium spectroscopy

Eagleyard has added a 795 nm distributed feedback laser to its product portfolio and has thus expanded the choices for rubidium spectroscopy and related applications such as optically pumped atomic clocks. The 14-pin windowed butterfly package with integrated beam collimation has ready-to-use single-frequency-emission features. It includes a thermoelectric cooler and thermistor to enable precise wavelength tuning. The package provides electrical input and optical output in the same layer and allows convenient use of standard peripheral equipment such as mounts and drivers. The laser features a linewidth of less than 1 MHz, a mode-hop-free tuning range greater than 10 GHz, and output power of 80 mW. An optional integrated microisolator is available. **Eagleyard Photonics GmbH**, Rudower Chaussee 29, 12489 Berlin, Germany, www.eagleyard.com



Laser-beam control platforms

With millisecond response and settling time and high dynamic linearity, S-335 miniaturized fast steering mirror platforms from Physik Instrumente are suitable for use in microscopy, optics, photonics, and semiconductor manufacturing. Specific applications include laser-beam steering, image processing and stabilization, and materials processing. The piezo-based stages provide precise angular tip and tilt motion of the top platform around two orthogonal axes. The company claims the flexure-guided, electro-ceramic-driven systems can provide higher accelerations than other actuators. They thus enable step response times in the submillisecond range. The systems deliver frictionless backlash-free motion and their single pivot-point design prevents the drawback of polarization rotation. **Physik Instrumente LP**, 16 Albert St, Auburn, MA 01501, www.pi-usa.us



Rajasundaram Rajasekaran, Sales

Maximize Your Accuracy

HighFinesse wavelength meters offer both: Highest precision and unmatched speed. They enable measurements with an unrivaled accuracy of 2 MHz plus 500 kHz resolution and up to 20 kHz acquisition speed, covering an extremely broad range of 192 nm to 11 μm .

Solid state Fizeau interferometers achieve this ultimate performance which also supports pulsed lasers. Complex experiments with up to eight lasers can be stabilized, such as TOPTICA's tunable diode lasers, to **maximize your accuracy**.

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- ▶ Up to 20,000 Hz acquisition speed
- ▶ Measurement ranges from UV to IR (192 nm .. 11 μm)
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Statement of Ownership, Management, and Circulation

(Act of 12 August 1970; Section 3685, Title 39, USC)

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15. Extent and nature of circulation:
 - A. Total number of copies (net press run)
Average* 97 476 August** 92 567
 - B. Paid subscriptions
 - 1,2. Mailed subscriptions
Average* 67 578 August** 66 047
 - 3,4. Sales through dealers and carriers, street vendors, counter sales outside USPS; other classes mailed
Average* 14 307 August** 13 710
 - C. Total paid distribution (sum of B1-B4)
Average* 81 885 August** 79 757
 - D. Free or nominal rate distribution
 - 1,2. Free or nominal rate mail copies
Average* 7 494 August** 7 297
 - 3,4. Free or nominal rate copies mailed at other classes or other distribution
Average* 2 086 August** 1 575
 - E. Total free or nominal rate distribution (sum of D1-D4)
Average* 9 580 August** 8 872
 - F. Total distribution (sum of C and E)
Average* 91 465 August** 88 629
 - G. Copies not distributed (office use, leftovers, and spoiled)
Average* 6 011 August** 3 938
 - H. Total (sum of F and G—should equal net press run shown in A)
Average* 97 476 August** 92 567
 - I. Percent paid (C/F × 100)
Average* 89.53% August** 89.99%
16. Electronic copy circulation: PHYSICS TODAY
 - A. Paid electronic copies
Average* 24 481 August** 25 318
 - B. Total paid print copies (line 15C) plus electronic copies (line 16A)
Average* 106 366 August** 105 075
 - C. Total print distribution (line 15F) plus electronic copies (line 16A)
Average* 115 946 August** 113 947
 - D. Percent paid (both print and electronic copies) (B/C × 100)
Average* 91.74% August** 92.21%

* Average number of copies of each issue during preceding 12 months.

** Actual number of copies of single issue published nearest to filing date.

I certify that the statements made by me above are correct and complete.

Randolph A. Nanna, Publisher

NEW PRODUCTS



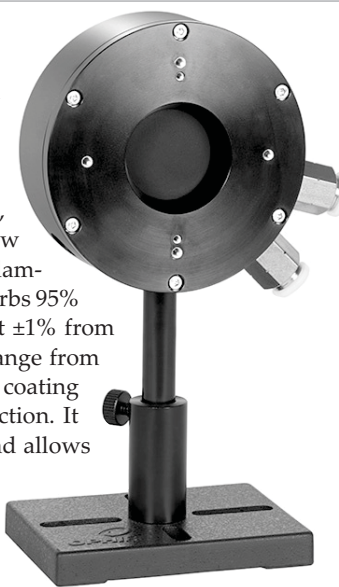
Air-cooled fiber-optic cables

Coherent has introduced its RQB fiber-optic cables for use with fiber lasers

operating at CW power levels up to 1.5 kW and pulsed lasers to 1 MW. The air-cooled, beam-delivery cables have a standard QBH interface, which lowers cost and can enhance system simplicity in air-cooled fiber-laser applications. Quartz block technology enables the use of antireflection coatings to reduce overall losses to under 3%. A mode stripper prevents unwanted back reflections and pump light from propagating in the cladding. An integrated thermoswitch in the connector protects against overheating, and a safety interlock continuously monitors the status of the fiber. RQB fiber-optic cables are available with a 0.20 numerical aperture, core diameters from 50 μm to 1000 μm , and lengths of 5 m to 200 m. **Coherent Inc**, 5100 Patrick Henry Dr, Santa Clara, CA 95054, www.coherent.com

High-power laser sensors

MKS Instruments, which includes Ophir-Spiricon, offers a line of high-damage-threshold laser power and energy sensors for CW lasers with high power densities and for pulsed lasers. The Ophir models 1000W-LP2-34, L1500W-LP2-50, 5000W-LP2-50, and FL600A-LP2-65 feature a new reflection-reducing LP2 coating that provides a damage threshold of 10 kW/cm² at 1 kW power. It absorbs 95% at most wavelengths and is totally spectrally flat $\pm 1\%$ from 0.2 μm to 1.1 μm . The sensors cover a spectral range from 0.35 μm to 2.2 μm . The high absorption of the LP2 coating reduces dangerous and often harmful back reflection. It provides very low dependence on beam angle and allows the sensors to measure divergent high-power lasers, such as diode laser bars, and collimated beams. **Ophir-Spiricon LLC**, 3050 N 300 W, North Logan, UT 84341, www.ophiropt.com



Fast STEM for materials studies

Thermo Fisher Scientific developed its Talos F200i scanning transmission electron microscope for advanced material characterization applications. Extensive automation facilitates high productivity and fast switching among multiple users. Easy mode switching and constant power lenses allow for fast changes among imaging and analytical modes, so users do not need to wait for the system to equilibrate. With automated daily tuning of operational parameters, users can maintain optimal imaging conditions and thereby improve the repeatability of measurements and their reproducibility. The system's small footprint and accessible enclosure expedite service and reduce infrastructure and support requirements. Options include fast cameras, smart software, and sample holders. **Thermo Fisher Scientific Inc**, 168 Third Ave, Waltham, MA 02451, www.thermofisher.com

