

SPECTROSCOPY

Tech Pulse



May 2018

Spectroscopy Tech Pulse is a special edition newsletter from Photonics Media covering key developments in spectroscopy technology. Manage your Photonics Media membership at Photonics.com/subscribe.

SMS Reveals Hidden Behaviors

Single-molecule spectroscopy is gaining traction in a wide range of fields, from DNA sequencing to understanding how cells, drugs, genes or proteins interact. The potency of single-molecule techniques is their capability to attain the ultimate limit of sensitivity — a single emitter. No averaging over a large number of molecules is required, since the properties of just one molecule are measured at a time.



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Spectroscopy Explores Photoinduced Reactions in Anticancer Drug

Using IR spectroscopy, researchers have gained fresh insight into how a platinum-based chemotherapy drug candidate functions when activated by light. Completely inactive and nontoxic in the dark, the treatment can be targeted to cancerous areas and is triggered only when directed light hits it.



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Laser Spectral Characterization

bristol-inst.com

Products

Admesy Hera Series Spectrometer

Admesy BV

The Admesy Hera series spectrometer is a highly accurate, compact and robust spectrometer suitable for a broad range of measurements. Applications can range from development and sample-based inspection in the R&D lab to 24/7 inline use in production environments.

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IR Filters for Thermal Imaging and Gas Detection

Spectrogon US

Spectrogon manufactures infrared filters and windows with high transmission, high rejection outside the passband, and introducing low cosmetic defects — while maintaining excellent coating uniformity --- for thermal imaging applications such as cryogenically cooled IR detectors and for uncooled microbolometers.

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Diffraction Grating Solutions

Optometrics Corporation

Diffraction efficiency and dynamic range are critical parameters in many spectrometric instrument designs. Understanding why a particular reflective or transmission diffraction grating may have small yet necessary performance differentiation for instrument optimization success can be critical.

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771 Series Laser Spectrum Analyzer

Bristol Instruments Inc.

The 771 Series Laser Spectrum analyzer and a high-accuracy wavelength meter. With spectral resolution up to 2 GHz, wavelength accuracy as high as ± 0.2 parts per million, and an optical rejection ratio of more than 40 dB, the model 771 provides the most detailed information about a laser's spectral properties.

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Corning Hyperspectral Imaging

Corning Incorporated, Advanced Optics

Corning provides hyperspectral sensors and full hyperspectral systems for all applications including precision agriculture, industrial, environmental monitoring, mining, and mineralogy. Our microHSI™ family of hyperspectral sensors and systems combine the lowest size, weight, and power in the industry.

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BaySpec's Palm Spectrometer - Breeze™

BaySpec Inc.

BaySpec™ introduces the world's smartest Palm spectrometer for 400-1700nm with a simple one touch of button operation. Featuring proprietary miniaturized optics, Breeze™ is highly efficient for maximum sensitivity with ultrafast acquisition.

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New AvaSpec-NIR in EVO Series

Avantes BV

For measurements in the near infrared range out to 1.7 μm, Avantes offers a new series of uncooled spectrometer configurations. The AvaSpec-NIR256-1.7-EVO and the AvaSpec-NIR512-1.7-EVO offer the same high sensitivity optical bench with the next generation of electronics.

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C-WAVE: The CW Tunable Laser

HUBNER Photonics

The C-WAVE from HÜBNER Photonics is a unique, tunable, single frequency cw laser, covering 450 nm - 650 nm and 900 nm - 1300 nm. In the region 450 nm - 650 nm output powers of up to 200 mW are available while at 900 nm - 1300 nm output powers up to 400 mW are available.

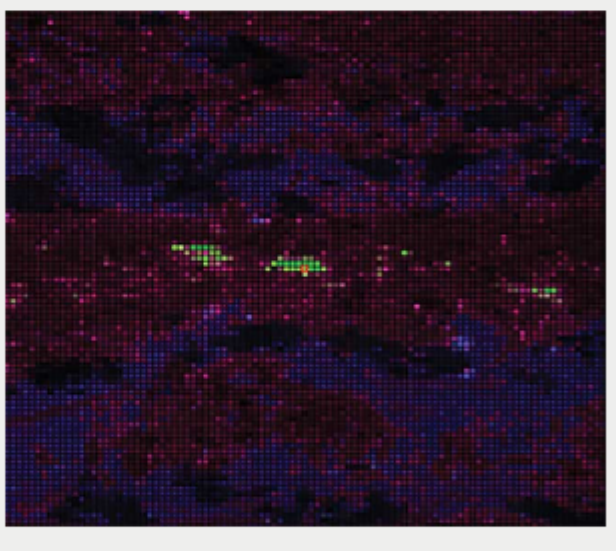
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More News

Laser-Induced Breakdown Spectroscopy Beyond the Lab

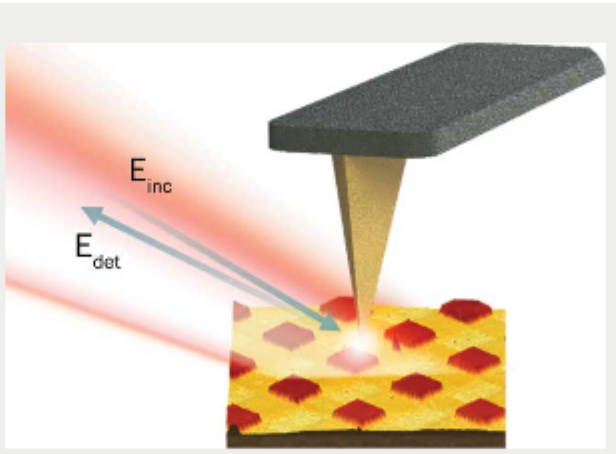
Laser-induced breakdown spectroscopy (LIBS) techniques have been studied and applied for more than half a century, but only recently has LIBS moved from research circles to industry. Offering advantages over other analytical techniques, laser-induced breakdown spectroscopy is useful in mineral extraction, forensics and point-of-care blood analysis.



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Nano-FTIR Spectroscopy Reveals Material's True Nature

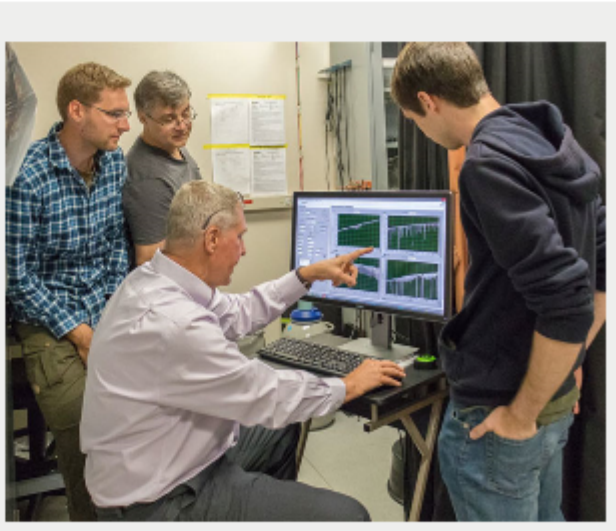
Fourier transform infrared spectroscopy (FTIR) from about 2 to 20 μm is a common analytical tool for characterizing material and useful in a range of applications in analytical chemistry, biology, geology and medicine. While conventional FTIR spectroscopy has limited spatial resolution, a technique called nano-FTIR achieves nanoscale-level spatial resolution by combining IR spectroscopy and scattering-type near-field scanning microscopy.



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MIR Spectroscopy Could Be Used to Detect Airborne Toxicants

Scientists have discovered a way to detect trace amounts of chemicals in the air by using an IR laser to identify the unique frequency of individual molecules. The technique is sensitive enough to detect a molecule present in the air at concentrations as low as one part per billion.



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Webinars

Hand-held Spectrometers in 2018 and Beyond

Wed, May 16, 2018 1:00 PM - 2:00 PM EDT

This webinar will survey the hand-held and portable spectroscopy field, with an emphasis on optical instruments, their underlying technologies and their applications. Presenter Richard Crocombe, Ph.D., will review some of the devices that are on the market today and conclude with a look at where hand-held spectroscopy could be headed. This webinar is sponsored by B&W Tek, by United Power Research Technology Corporation (UPRtek), by Hamamatsu, and by SPECIM.

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