Wednesday, November 06, 2019

SPECTROSCOPY Tech Pulse

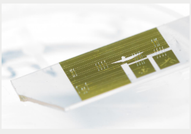
PHOTONICS MEDIA

November 2019

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.

Compact IR Spectrometer Fits on a Chip

In an advance for smartphone spectroscopy, researchers at ETH Zurich have developed a chip about 2 square centimeters in size that can be used with a smartphone to analyze infrared (IR) light in the same way a conventional spectrometer would.



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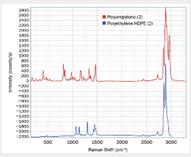
Characterizing Microplastics with Raman Spectroscopy

As the need to manage plastic waste increases, researchers are using Raman spectroscopy to characterize the toxicity of polymers and identify their sources. Several technologies exist for characterizing microplastics, including pyrolysis gas chromatography/mass spectrometry, Fourier transform infrared spectroscopy (FTIR), and Raman spectroscopy.



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Products

New: High-Sensitivity Cooled Spectrometer

Avantes BV

The AvaSpec-ULS 2048 x 64 TEC-EVO is an updated version of our AvaSpec-ULS 2048 x 64 TEC spectrometer, but with improved electronics and cooling, which means it enables long integration times of up to 120 seconds! This updated spectrometer is a welcome addition to Avantes' line of high-sensitivity spectrometers with its cooled, back-thinned detector.

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BaySpec's Breeze™– the Smartest Palm Spectrometer

BaySpec Inc.

BaySpec introduces Breeze™, the world's smartest palm spectrometer for 400-1700 nm with a simple one button operation. Featuring proprietary miniaturized optics, Breeze™ is highly efficient for maximum sensitivity with ultrafast acquisition. For the first time, a smart device delivers laboratory performance in a handheld form.

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771 Series Laser Spectrum Analyzer

Bristol Instruments Inc.

The 771 Series Laser Spectrum operates as both a high-resolution 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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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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More News

Q&A Spectroscopy gives clear view of data

Iwan W. Schie, leader of the Multimodal Instrumentation work group in the Leibniz Institute of Photonic Technology's (IPHT's) Department of Spectroscopy and Imaging in Germany, shares his take on recent advancements in spectroscopy, exciting areas of research, and what the future holds for the field.

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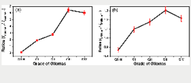
Visible Resonance Raman Spectroscopy Could Advance Tumor Identification

A team of researchers from the U.S. and China, led by Robert Alfano from City University of New York, has used visible resonance Raman (VRR) spectroscopy to identify and grade gliomas, a common tumor of the central nervous system. The researchers used in situ spectral biomarkers to identify the tissue from the interface between brain cancer and normal tissue and to evaluate glioma grades.



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Photoluminescence Spectroscopy Optimizes Perovskite Quantum Dots

During research and development of perovskite QDs, the emission properties of synthesized QDs must be characterized and this information must then be used to refine subsequent designs and syntheses. The most powerful way to characterize the emission properties of these materials is by using photoluminescence spectroscopy.

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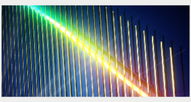
Single-Nanowire Spectrometer Operates Independently

Scientists at the University of Cambridge have developed a microspectrometer based on a single, compositionally engineered nanowire that is independent of complex optical components or cavities. According to the researchers, it is the smallest spectrometer ever designed.



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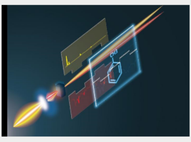
Spectroscopy Technique Widens the Spectra for Measuring Molecular Structure

Researchers at the University of Tokyo have combined two current spectroscopy techniques — infrared absorption and Raman scattering spectrometry — to create complementary vibrational spectroscopy. The new technique employs IR absorption and Raman scattering spectroscopy simultaneously.



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