Spectroscopy Tech Pulse

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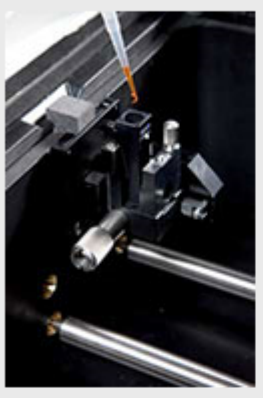
Monday, March 6, 2017

Molecular Spectroscopy Illuminates Life-Governing Systems



Molecular spectroscopy is photonics at its most fundamental: the interaction between light and matter. The information that this technique uncovers is also fundamental to us and to how we relate to every other organism around us. From routine analysis to specialist testing, molecular spectroscopy is used in chemistry, pharmacy, medicine, food control, environment, the life sciences and many other areas.

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Noninvasive Optical System Reveals Oral Cancer Signs

A new spectral imaging system holds promise for rapid, noninvasive screenings for oral cancers. The Diffuse Reflectance Imaging System (DRIS), developed by a team from the Centre for Earth Science Studies, identifies the margins of a lesion that cannot be easily visualized by the naked eye during invasive surgical interventions, said Dr. Narayanan Subhash, who led the research team.

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Photoacoustic Spectroscopy Takes Sting Out of Glucose Testing

A noninvasive method involving mid-IR photoacoustic spectroscopy (PAS) could make life easier for the more than 347 million people worldwide who live with diabetes. The new method, developed at Johann Wolfgang Goethe University, negates the need for the needle. Using IR laser light applied on top of the skin, the researchers measured sugar levels in the fluid in and under skin cells to read blood sugar levels.

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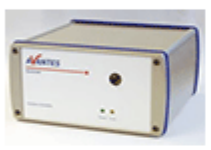

New High-Sensitve Spectrometer

Avantes BV

Avantes' introduces the new High-Sensitive spectrometer: AvaSpec-HS2048XL for applications where high resolution is not of a paramount concern.

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Transient Absorption Spectrometer

Newport Corporation

Newport's TAS Transient Absorption Spectrometer is the newest product in their line of ultrafast spectroscopy applications solutions.

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Spectral Sensors/8-Band Spectroscopy

PIXELTEQ

PixelSensor multispectral sensors use on-chip filtering to pack up to eight wavelength-selective photodiodes into a compact array for simpler and smaller optical devices.

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Subsurface Structures Probed via Spectroscopy

The hidden junctures where different layers of materials meet could become less mysterious under a new spectroscopy technique developed using the Advanced Light Source (ALS) at Lawrence Berkeley National Laboratory.

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Nano-FTIR Offers Versatility in Protein Studies

A new technique called Fourier transform infrared nanospectroscopy (nano-FTIR) overcomes the diffraction limits of mid-infrared spectroscopy for label-free chemical and structural imaging of protein structures with high resolution (less than 30 nm) and extreme sensitivity. The method maps protein structures with 30-nm lateral resolution and sensitivity to individual protein complexes of less than one attogram (10^{-18} gram).

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Trends in Spectroscopy: IR, UV-VIS Techniques Are Safe, Speedy and Skin-Deep

Spectroscopy is leading the way in both health care and medical research as a novel tool for improving diagnostics, disease detection and sensing. Dozens of spectroscopic techniques have evolved since the Indian researcher Sir C.V. Raman discovered a spectroscopic technique to observe molecular vibration and rotation in the 1920s. In more recent years, several exciting advances have made spectroscopy across the spectrum from near-IR to UV-VIS particularly invaluable for its promise in biomedical applications.

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Time-Resolved SRS Spectroscopy Facilitates Combustion Research

To perform successful time-resolved spontaneous Raman scattering spectroscopy in combustion, one critical aspect is the implementation of a temporal optical gating scheme to reject optical background, thus increasing signal-to-noise ratio (SNR).

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Industry Events

PITTCON 2014 - March 2 – 6 2014 · Chicago, IL

There are more than 2,000 technical sessions available to choose from with this year's conference at PITTCON. The 2014 comprehensive Technical Program will include, but not limited to, areas of analytical chemistry, applied spectroscopy, life sciences, bioanalysis, and food sciences.

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Continuum – Introducing Vista

The Vista dye laser offers the highest resolution (<0.03 cm-1) with the highest conversion efficiency (>30%) and the finest precision scanning, all combined to deliver optimal performance with every scan.

FEATURED WHITE PAPER

Power Technology's iMAT® DPSS Laser Platform Ideal for Raman Spectroscopy

Power Technology's iMAT® series of DPSS lasers are inherently beneficial to the Raman Spectroscopy industry because of its patented technology which inherently produces actively stabilized single frequency wavelengths at 532 nm and 1064 nm. This revolutionary technology earned international recognition by winning the Frost & Sullivan European Diode-Pumped Solid State Laser Technology Innovation of the Year award in 2009.

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