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37th ASLMS Annual Conference on  
**ENERGY-BASED MEDICINE & SCIENCE**  
April 5-9, 2017

# Spectroscopy

## Tech Pulse



THE PULSE OF THE INDUSTRY



Wednesday, May 7, 2014

### Making Strides in Fourier Transform Spectroscopy



FTS is broadening as new techniques appear and commercial instrumentation becomes more sophisticated. Applications are evolving to include astronomy and planetary science, atmospheric and environmental remote sensing, pharmaceutical research and quality control, and all types of chemical and molecular laboratory spectroscopy.

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### Molecular Spectroscopy Market Expected to Hit \$5.9B by 2018

Demand for molecular spectroscopy is expected to grow due to increasingly rigorous quality requirements for medications and their excipients, food safety, technological advancements, and research and development.

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### FRET Pursues Affordable, Robust, User-Friendly Instruments



Improvements to Förster resonance energy transfer would not only make it easier to use in existing applications, but also open it up to novel applications such as single-molecule analysis inside living cells.

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### Products on PhotonicsBuyersGuide.com



#### USB Spectrometers

**Ocean Optics**  
Ocean Optics USB series spectrometers are versatile spectrometers for UV, Visible and Shortwave NIR (200-1100nm) applications.

[More info >>](#)



#### Laser Spectrum Analyzer

**Bristol Instruments**  
The 721 Series operates as a high-accuracy wavelength meter and a high-resolution spectrum analyzer for spectral characterization of CW and high-repetition rate pulsed lasers.

[More info >>](#)



#### Multispectral Sensors/ 8-band Spectroscopy

**PIXELTEQ**  
PixelSensors use exclusive on-chip filtering to measure up to eight application-specific wavelengths and colors of light - delivering 8-band spectroscopy in < 1 square centimeter.

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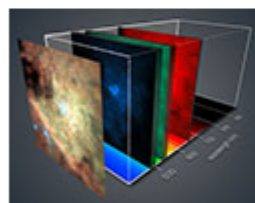
#### Six Decades of Building an Industry

**Photonics Media**  
Photonics Media presents photon by photon, an interactive timeline that looks at some key highlights in the development of photonics over the past six decades.

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### More Articles on Photonics.com

### MUSE Offers 3-D View of Distant Galaxies



The Multi-Unit Spectroscopic Explorer uses 24 spectrographs to create images and spectra of selected regions of the sky. This allows for the study of the properties of an object at different wavelengths, analyzing chemical composition and other physical properties, simultaneously.

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### 3 Questions Interview: Prof. Dr. Jürgen Popp

"We are planning to transfer our Raman approaches into clinical settings [and focus] on in vivo Raman spectroscopy to monitor pathophysiological processes within organs. These efforts involve the development of portable and easy-to-use inclusive laser and Raman systems."

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### Studying Altitude Sickness with NIR Spectroscopy

Using NIR spectroscopy, researchers from University Hospital Frankfurt monitored changes in concentration of hemoglobin, both oxygenated and deoxygenated, in the supply of blood to mountain climbers' brains to determine whether abnormal breathing patterns were reducing that supply and potentially exacerbating the effects of altitude sickness.

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### Webinar: Light Advances in Biomedicine

In one of our most popular webinars to date, Dr. Robert R. Alfano, distinguished professor of science and engineering at The City College of the City University of New York, discusses key fingerprints to detect aggressive cancer cells; two new NIR spectral windows for imaging with less scattering of light in tissue; the use of upper singlet S2 for dyes to increase imaging depth using two-photon techniques; the use of spatial frequency spectra to detect structure in cancerous tissues and the brain; and, most of all, the use of supercontinuum – the ultimate white light – in biomedicine applications. Watch the archived video of his presentation [here](#).

#### WHITE PAPER



### Measuring Optical Densities Over 10 Abs on the Agilent Cary 7000 Universal Measurement Spectrophotometer (UMS)

Agilent Technologies, Inc., Chemical Analysis

High blocking optical filters deliver critical optical control in a wide variety of consumer and industrial products. Highly attenuating (i.e., high optical density) filters are used in personal protective equipment, such as laser safety eyewear, through to precise, low light level control in optical systems for enhanced sensitivity at preferred wavelengths. This technical overview demonstrates the performance of the Cary 7000 UMS for the measurement of such materials.

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