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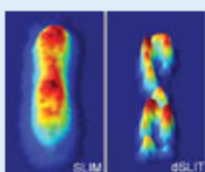
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Optical Microscopy Quantifies Live Cells Without Labels



With increasing frequency, noninvasive, label-free microscopy methods are capturing subcellular details in live cells and tissues at ever-smaller resolutions. Understanding the complex behavior and dynamics within live cells is key to exploring biological processes. Researchers have increasingly employed novel optical microscopy techniques and devices to conduct live-cell imaging, which allows the study of dynamic processes such as cell division and protein formation in real time.

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Silk's Photonic Talents Brought to Light at FIO 2012

Natural silk's potential as an eco-friendly way to manipulate light for applications such as biosensors, lasers and photonic chips was presented by US and French researchers this week at the Optical Society's 96th annual meeting, Frontiers in Optics (FIO) 2012.

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Fiber Optics Revolutionizes Neuroscience

Fiber optics might just be the Rodney Dangerfield of the photonics world: Despite being a workhorse technology that has contributed to countless studies over the years, it doesn't always get the respect it deserves. But, in fact, it is integral in a broad spectrum of imaging and monitoring techniques.

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OCT Images Blood Vessels that Feed Cancer

An optical coherence tomography technique that noninvasively maps the network of tiny blood vessels in the epidermis could soon help doctors better diagnose, monitor and treat skin cancer.

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In this special edition of Light Matters, Photonics Media's weekly newscast, co-anchor Melinda Rose chats with Fiorenzo Omenetto of Tufts University about his pioneering work in the field of silk optics and the use of silk for photonics and high technology applications.

Light Tube Grabs, Scans Tiniest Bacterium

A light tube that can grab, orient and record the movements of tiny agile unicellular organisms may soon help scientists better understand bacterial infectious diseases.

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Flexibility Improves Photoacoustic Microscopy

Photoacoustic imaging, emerging as a promising biomedical imaging technology, combines the advantages of optical imaging and ultrasonic imaging. With ultrasonic detection of optical absorption in biological tissues, photoacoustic imaging yields a relatively large depth-to-resolution ratio among all the optical imaging technologies.

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Tell-Tale Color Changes: Camera Can Find Age of a Bruise

To determine physical abuse of a child, several warning signs must be considered: Is the child scared? Are bruises present, and if so, where? What do the parents say happened to the child? Although a physician can pick up on most of these signals, a conviction based on this information alone can be difficult. An imaging system under development will determine the age of a bruise by gauging its color and the ratio of hemoglobin to bilirubin.

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Featured White Paper



Dispersive 1064nm Raman Spectrometer Family
 BaySpec, Inc.

Owing to technological improvements spurred on by the telecommunications boom of the last decade, Raman spectroscopy has become much more accessible to users in all fields. The combination of improved technology and the technique's molecular sensitivity have led to a surge in Raman usage in a myriad of application areas, including pharmaceutical, biomedical, industrial, and forensic, among others. In all of these applications, however, there remains a struggle to extract useful Raman spectra from fluorescent and luminescent samples.

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Scientific-Grade Spectrometer
 Ocean Optics, Inc.



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 Vision Research Inc.



Laser-Line Cleanup Filters
 Edmund Optics, Inc.



Ultraviolet Multispectral Camera
 Ocean Thin Films

Industry Events

VISION 2012 - November 6 - 8, 2012 - Stuttgart, Germany
 Visit us at booth 1D01



Two spectacular events coincide this year with VISION 2012, the leading international trade fair for machine vision: VISION celebrates its 25th anniversary and it moves into the most attractive and largest trade fair hall on the Stuttgart trade fair grounds, Hall 1. All exhibitors are united for the first time under one roof under the theme "One VISION." Approximately 360 exhibitors representing 30 countries are expected at the world's largest and most important form for the machine vision industry. More than 7000 visitors are expected in Stuttgart, with an increasing number coming from outside Germany. VISION 2012 will present the latest high-tech machine vision components such as cameras, image sensors, vision sensors, frame grabbers, illumination, laser, optics, lenses and software.

[MORE EVENTS >>](#)

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BLOGS

Different Wavelengths
The Optics of Paranormal Activity
 The site of the now-shuttered Camp Evans, in Wall Township, N.J., has played host to the Ku Klux Klan, former Nazi scientists and Senator Joseph McCarthy, and is said to be among the most haunted in the state. A group called Behind the Wall Paranormal regularly conducts investigations of the site, using a variety of optics-based instruments. I joined them a few weeks ago to see what I could learn...

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