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# BIOPHOTONICS

BRINGING LIGHT TO THE LIFE SCIENCES

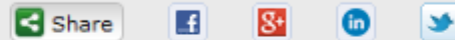
Wednesday, December 23, 2015

## An Illuminated State of Mind



In a small laboratory with very little equipment, psychiatrist, neuroscientist and Professor Karl Deisseroth began a high-risk project to render individual neurons photosensitive. Despite facing a great deal of skepticism from his peers, he remained convinced that if adjustments could be made to specific neurons, then scientists would finally have the tools to decode one of the most complex biological systems known to man — the human brain.

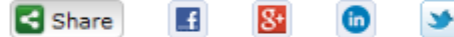
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## Automated Biopsy Assessment Possible with SLIM

Spatial light interference microscopy (SLIM) might provide a quantitative way to diagnose breast cancer. Researchers at the University of Illinois recently used data-based SLIM assessment to determine whether breast tissue biopsies from 400 patients contained benign or malignant cells. The results agreed 88 and 87 percent of the time with the findings of two histopathologists who assessed the same samples using hematoxylin and eosin stains.

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## Spectroscopy Can Head Off Food Safety Crises



Spectroscopy is a safe, nondestructive analytical method that can improve the quality control and assurance at production facilities by providing real-time, accurate measurement of the products at various steps to prevent larger quality issues.

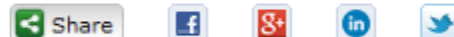
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## Light Moves Mirror for 3D Sensing

A laser system that includes a mirror moved by the force of light could enable the miniaturization of 3D sensors for driverless cars and bioimaging. The mirror, an ultrathin high-contrast grating, alters the frequency of the laser beam as it moves, making it suitable for lidar and optical coherence tomography (OCT).

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## Featured Products



### SPECTRA X Light Engine

Lumencor, Inc.  
The SPECTRA X light engine from Lumencor is the ultimate integrated solid-state excitation source for fluorescence microscopy.

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### Scanning Confocal Microscope

Bruker Nano Surfaces  
Offering quantitative live-cell imaging, Bruker Corp. has announced the Opterra II multipoint scanning confocal microscope.

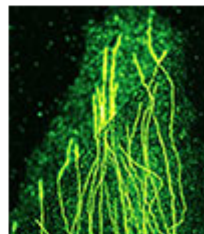
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### Dual Inverted SPIM

Applied Scientific Instrumentation, Inc.  
ASI has developed a new form of light sheet microscopy with our collaborators in the scientific community.

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### Time-resolved Fluorescence Microscope

PicoQuant GmbH  
The MicroTime 200 STED is a complete confocal STED system with unlimited flexibility for time-resolved applications.

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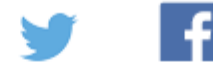
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