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# BIOPHOTONICS

BRINGING LIGHT TO THE LIFE SCIENCES

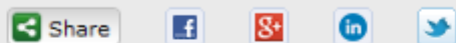
Wednesday, June 24, 2015

## Spectroscopy Aids Disease Detection, Faces Obstacles

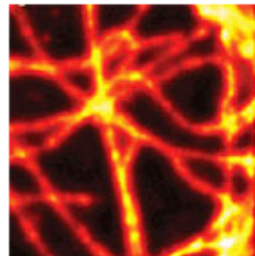


Spectroscopy advances are steadily reducing disease-detection time frames. These new methods also hone the accuracy of disease identification and provide for more timely treatment protocols. As with anything groundbreaking, though, roadblocks inevitably arise. As with the diseases themselves, time is precious when resolving these hurdles. Sometimes, though, there's just no time to spare.

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## Single-Molecule Localization Microscopy with sCMOS Cameras



EMCCD-based cameras with high quantum efficiencies and low readout noise characteristics traditionally have been the preferred technology for SMLM superresolution imaging. However, with tailored localization algorithms, sCMOS cameras have become a notable alternative for superresolution microscopy.

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## Photothermal Nanoparticles Extend Range of Optogenetics

Targeted gold nanoparticles allow light to activate neurons, a finding that could enable the use of optogenetic techniques without genetic manipulation. Optogenetics, the use of light to control neural activity, is a powerful technique that has seen widespread use in neuroscience research.

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**X-Cite 120LEDmini**  
Lumen Dynamics  
(Excelitas Technologies)  
Excelitas Technologies introduces the new X-Cite® 120LEDmini - our most compact, simple-to-use yet powerful broadband illumination system for end user and OEM fluorescence applications.

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**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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**Picosecond Laser Module**  
PicoQuant GmbH  
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**Picomotor Linear Stage**  
Newport Corporation  
The PicoLis is a compact linear stage that incorporates our Picomotor actuator technology into one simple precise solution.

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**iChrome SLE**  
TOPTICA Photonics, Inc.  
The multi-laser engine, iChrome SLE, provides up to eight different colors from a broad selection covering 405 - 640 nm.

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**Dual Inverted SPIM**  
Applied Scientific Instrumentation, Inc.  
Applied Scientific Instruments has developed a new form of light sheet microscopy with our collaborators in the scientific community.

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**Fluorescence Spectrometer**  
Edinburgh Instruments, Ltd.  
Edinburgh Instruments has combined its FS5 single-photon-counting spectrofluorometer with a liquid nitrogen cryostat.

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**Mini Focus Module**  
New Scale Technologies, Inc.  
This miniature focus module with built-in controller is the smallest, easiest-to-integrate focus system for precision microscopes that are embedded in handheld instruments.

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**Ultra-Narrow UV Filters**  
Alluxa  
Alluxa's Ultra Series of high performance filters now includes our Ultra-Narrow UV Filters.

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**Laser Integration for Optogenetics**  
Siskiyou Corporation  
The IS-OGP is a simple, turnkey solution integrating an external laser beam into an existing microscope in optogenetics experiments to stimulate target neurons.

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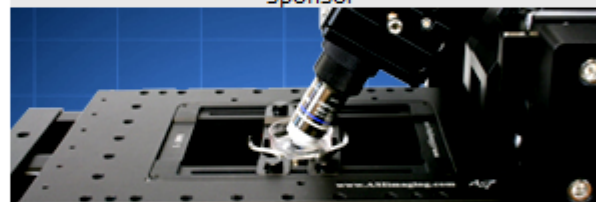


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### OBLIQUE SINGLE PLANE ILLUMINATION MICROSCOPE (OSPI-M)

The oSPIM is two microscopes in one. The lower microscope can be used for conventional fluorescent imaging including WF, confocal, and TIRF. The bottom objective is also used for light sheet (SPIM) illumination, with light sheet imaging from the tilted top objective.



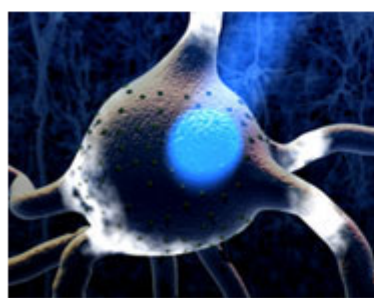
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Wed, Jul 1, 2015 1:00 PM - 2:00 PM EDT

FREE WEBINAR



Complex biological systems like the brain present a challenge: their molecular building blocks are organized with nanoscale precision, but support physiological processes and computations that occur over macroscopic length scales. Presenter Ed Boyden and the Synthetic Neurobiology Group are creating tools to enable the mapping and repair of such complex systems.



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