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# BIOPHOTONICS

BRINGING LIGHT TO THE LIFE SCIENCES

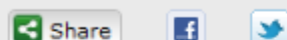
Wednesday, October 22, 2014

## Multiphoton Microscopy Is Heading for the Mainstream



As a postdoc in the early 2000s, Dr. Ruth Empson worked with one of the first multiphoton microscopy systems in Britain. The technology was robust, she said, but handling it could sometimes prove a bit of a challenge – especially for a biologist like herself, who didn't have the technical background of the physicists who had developed it and who, at the time, made up much of its user base.

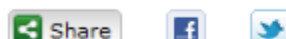
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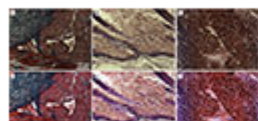
## Optogenetics Advances Ultrafast Lasers

The evolving and dynamic field of functional brain mapping is creating a need for customized lasers. Optogenetics is enabling scientists to use light to activate or inhibit signaling among neurons and, in some cases, to link details of neural network operation to behavioral and sensory functions of the whole animal.

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## Color Management Helps Microscopy Show Its True Colors



Establishing a standard could allow microscopists to verify and reproduce results. Laboratory managers and researchers generally agree that having more accuracy and consistency in color rendition could assist in achieving improved evaluation of results. However, color management has seemed so complex and elusive that many scientists and medical professionals have given up on achieving it.

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## Lessons Learned in Biophotonic Systems Design

New multiparametric modeling tools drastically simplify the design of complex biophotonic systems. For all the sophistication of modern engineering practice, the design of complex biophotonic systems remains as much an art as a science. This means that the skill and insights of individual designers and design teams are critical to the performance of the system.

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## An Open Letter to the Photonics Industry

Photonics has been recognized by the United Nations with its own international year in 2015 – the International Year of Light and Light-based Technologies. Join the efforts to raise awareness of how photonic technologies can solve global challenges

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## Biophotonics Products



### Compact White Light LED Source

**Lumen Dynamics**  
The new X-Cite 110LED is a compact, white light LED light source for fluorescence imaging applications.

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### Linear Motor Stage

**Ludl Electronic Products Ltd.**  
LEP's new Linear Motor stage employs new technology that eliminates the traditional motor and lead screw drive found in conventional stages.

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### Fiber Optic Bundles

**CeramOptec Industries, Inc.,**  
**Industrial Fiber Optics**  
CeramOptec Industries is a world leader in the production of specialty fiber optic bundles to meet the design requirements of almost any application.

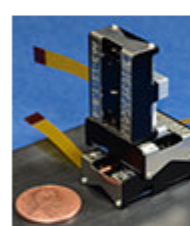
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### Excitation and Illumination

**LaserGlow Technologies**  
LaserGlow Technologies provides laser sources from 266-2200 nm.

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### USB Micro Stage

**New Scale Technologies, Inc.**  
The M3-LS Linear Smart Stage has 0.5 µm resolution with absolute encoding.

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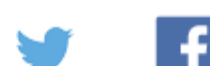
### Electromechanical Shutters

**IDEX Optics & Photonics Marketplace**  
Melles Griot offers five redesigned electromechanical shutters for life sciences, semiconductor, and defense and security applications, as well as manufacturing and vision enhancement in harsh environments.

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## UXR-300BF Ceramic Xenon Lamps

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## PHOTONICS buyers' guide

Looking for **Biophotonics products**? Search the Photonics Buyers' Guide or Browse these product categories:

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[Fluorescence Spectrometers](#)  
[Laboratory Instruments and Supplies](#)  
[Medical Laser Delivery Systems](#)  
[Ablation Laser Systems](#)  
[Microscope Cameras](#)

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### OBLIQUE SINGLE PLANE ILLUMINATION MICROSCOPE (OSPIIM)

The oSPIIM 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.

[www.asiimaging.com](http://www.asiimaging.com)

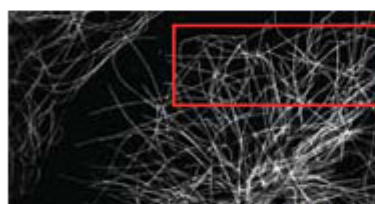


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## WEBINAR



## Imaging Biology at High Spatiotemporal Resolution

Wednesday, October 29, 1 p.m. EDT  
**FREE WEBINAR**



Hari Shroff

Presented by Hari Shroff  
National Institute of Biomedical Imaging and Bioengineering (NIH)

Hari Shroff will present alternative SIM implementations that permit resolution doubling in live volumes greater than 10 times thicker than possible with conventional SIM, as well as a hardware modification that enables effectively "instant" SIM imaging at rates 10 to 100 times faster than other SIM implementations.

The second half of the talk will focus on the development of inverted selective plane illumination microscopy (iSPIM); progress that quadruples the axial resolution of iSPIM by utilizing a second specimen view, thus enabling imaging with isotropic spatial resolution (dual-view iSPIM, or diSPIM); and introduction of a protocol for a do-it-yourself diSPIM.

## Industry Events

### Neuroscience 2014 - Nov. 15 - 19, 2014 - Washington DC



Neuroscience 2014 is the venue for neuroscientists to present emerging science, learn from experts, forge collaboration with peers, explore new tools and technologies, and advance careers. Join more than 30,000 colleagues from more than 80 countries at the marketplace of ideas and tools for global neuroscience.

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