

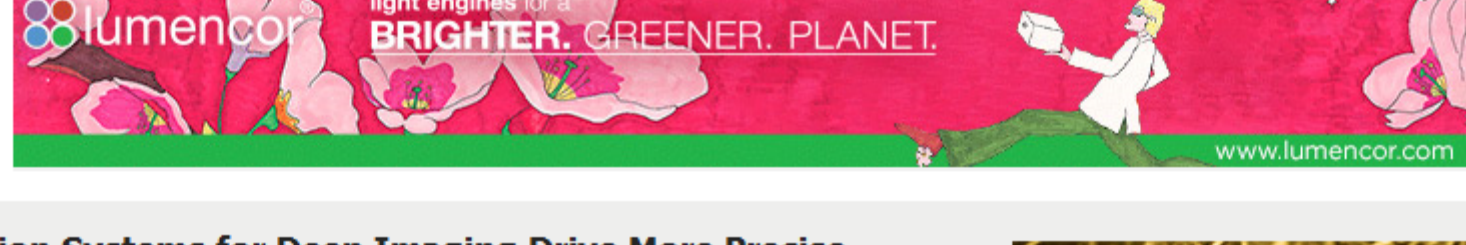
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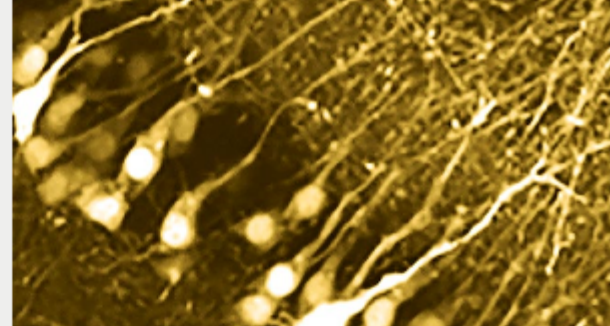


Monthly newsletter focusing on how light-based technologies are being used in the life sciences. Includes news, features and product developments in lasers, imaging, optics, spectroscopy, microscopy, lighting and more. Manage your Photonics Media membership at Photonics.com/subscribe.



Correction Systems for Deep Imaging Drive More Precise Views

Multiphoton microscopy is widely regarded as the primary technique for deep imaging in live tissue. However, image brightness and resolution are typically poorer at deep sites because of increased optical spherical aberration compared to superficial locations. This makes it difficult to study fine structures, such as dendritic spines in deep brain regions. Microscope objectives equipped with adjustable correction collars can compensate for spherical aberration and improve resolution by moving internal lens elements. Motorized correction collars facilitate more precise and convenient operation compared to direct manual control. Often, however, corrections are only applied at a static depth within the specimen.



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LASER World of PHOTONICS 2019: An Innovation Playground

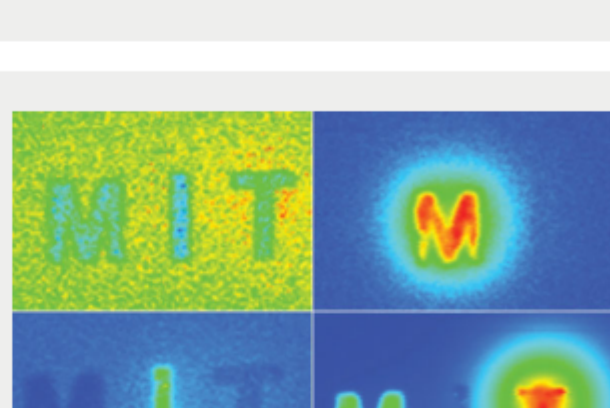
With a first-rate portfolio, LASER World of PHOTONICS (Laser Munich) is a one-stop shop for research and technology, industry, and academia — showcasing numerous photonics components, systems, and applications. The biennial conference and exhibition, to be held June 24-27 at Messe München in Munich, has been touted one of the world's leading international trade fairs.



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NIR Imaging System Could ID Hard-to-Detect Cancers Earlier

An optical imaging system developed by MIT researchers could enable physicians to identify tiny tumors deep within the body, leading to earlier detection and treatment of cancer. The system uses fluorescent probes that emit light at different NIR wavelengths, depending on the type of doping element that is used.



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Featured Products

TracePro Optics and Illumination Software

Lambda Research Corp.

TracePro combines a graphical user interface with solid modeling, Monte Carlo ray tracing, analysis features, CAD import/export, optimization methods, and a complete and robust macro language to solve a wide variety of problems in illumination design and optical analysis.

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Making LEDs Work Smarter, Not Harder

CoolLED Ltd.

CoolLED, provider of cutting edge LED illumination systems for researchers and clinicians, has enhanced fluorescence image quality through the introduction of new filter sets matched to fluorophores and LED wavelengths. LED light sources are the future of microscopy illumination, and provide vast experimental, practical,...

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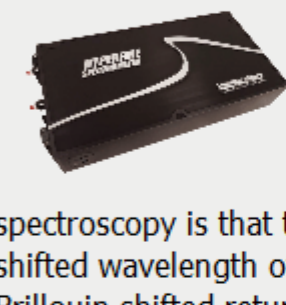
The Next Generation Comes to Light

Lumencor Inc.

Lumencor's new Spectra III Light Engine.

- Breadth: Eight spectrally optimized sources for DAPI, CFP, GFP, YFP, Cy3, mCherry, Cy5, Cy7 excitation
- Power: ~500mW / output, ~4W total
- Control: Exceptional power and wavelength stability
- Stability: Exceptional reproducibility
- Ideal for quantitation
- Ease of use: Small, cool, pre-aligned, Mercury-Free
- Applications: Fluorescence microscopy among others, OEM customization upon request

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HyperFine Brillouin Spectrometer

LightMachinery Inc.

The great challenge with Brillouin spectroscopy is that the scattered signal from the unshifted wavelength of the laser can overwhelm the small Brillouin shifted return signal. LightMachinery has combined its leading-edge HyperFine spectrometer with a very narrow band tunable filter to suppress the bright unshifted laser frequency.

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Nanopositioning for High-Res Microscopy

PI (Physik Instrumente) LP, Air Bearings and Piezo

Precision Motion

Z-stage inserts, XY and XYZ Piezo Flexure Scanners for Microscopy, known as PINano® stages, are designed to mount on manual or motorized microscope stages. They can accommodate slides or other inserts. Packages are affordable and include a digital servo controller for higher performance (linearity, dynamics).

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Dual Light Sheet Microscopy

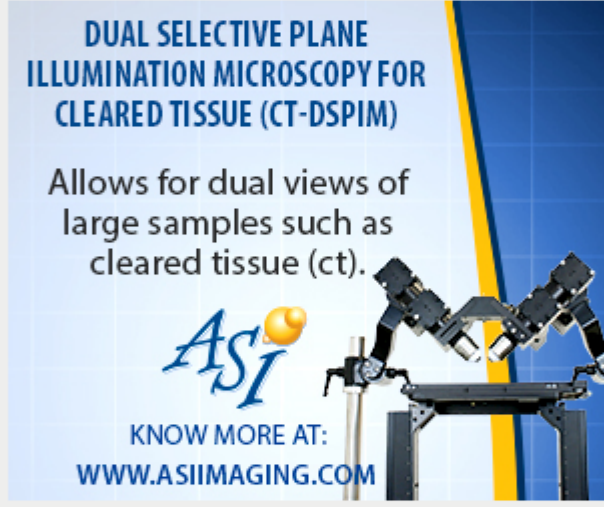
Applied Scientific Instrumentation Inc.

ASI's Dual Selective Plane Illumination Microscopy for Cleared Tissue (ct-dSPIM) is one of many light sheet microscope configurations possible using our modular components. This flexible and easy-to-use Selective Plane Illumination Microscopy (SPIM) implementation allows for dual views of large samples.

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In Case You Missed It

Finger-Mounted Optical Probe Improves Breast Cancer Removal

Researchers have developed a wearable probe that enhances the sense of touch by imaging and quantifying the stiffness and elasticity of biological tissue in order to improve the surgical removal of breast cancer. The finger-mounted probe uses a technique called quantitative micro-elastography (QME) to translate the sense of touch into high-resolution images.



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Photoacoustic Imaging Detects Early Symptoms of Preeclampsia

Researchers from the Tulane School of Medicine and the Tulane School of Public Health and Tropical Medicine used spectral photoacoustic imaging to monitor longitudinal changes in placental oxygenation levels in an in vivo animal model of preeclampsia.

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New 30-Minute Blood Test to Reduce Sepsis Deaths

A new detector using photonics to identify E. coli bacteria from a tiny drop of blood in less than 30 minutes could help reduce the mortality rate from sepsis by more than 70%.

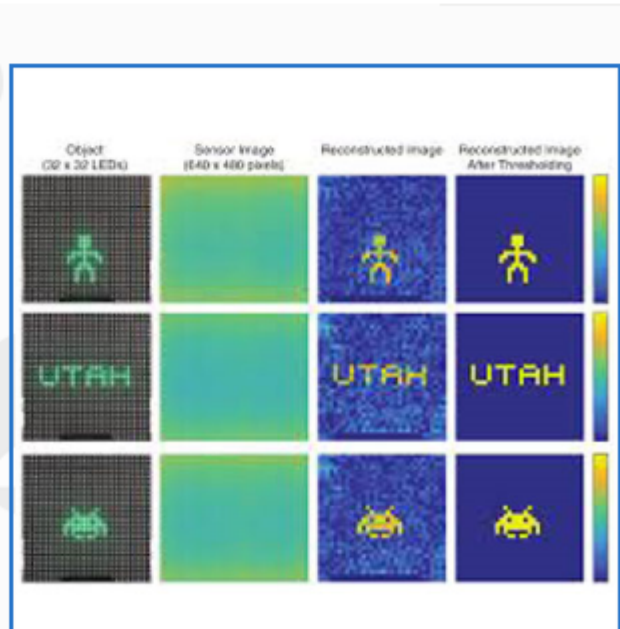
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Webinars

From Lensless Cameras to Deep-Brain Microscopy: Exploring the Potential of Computational Imaging

Tue, Jun 11, 2019 1:00 PM - 2:00 PM EDT

This webinar will introduce you to the enormous potential of computational imaging for a range of industries, from manufacturing to machine vision to biophotonics. Professor Rajesh Menon and his group from the University of Utah will discuss several examples of computational imaging, including a "see-through" camera, comprised of a transparent imaging device facing into the edge of the window; a snapshot hyperspectral imaging camera; and an approach to deep-brain imaging that utilizes only an ultrathin surgical needle to transport light in and out of a mouse brain. In all cases, imaging is essentially a form of information transfer enabling highly nonintuitive forms of imaging.



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