BIOPHOTONICS

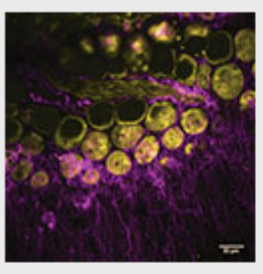
BRINGING LIGHT TO THE LIFE SCIENCES

PHOTONICS MEDIA

THE PULSE OF THE INDUSTRY

Wednesday, February 25, 2015

Multiphoton Imaging Takes New Directions



Since the early 1990s – and even more so in the past decade – multiphoton excited fluorescence microscopy has seen rapid growth and wide adoption as the in vivo imaging technique of choice for various areas of biological research. Today there are thousands of commercial and homemade multiphoton microscopes, all powered by femtosecond ultrafast laser systems. Developments in ultrafast laser technology have meaningfully and, in some cases, critically enabled the ubiquitous adoption and success of MPEF microscopy in thousands of laboratories and imaging centers worldwide.

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Lens-Free Microscopy Goes Scalable

A compact lens-free microscope could replace microscopes – and even expand their use – in a number of key biomedical applications, such as stem-cell culturing or in vitro drug testing. Using photonic integration, the microscope can even be microsized and used in advanced lab-on-chip systems.

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Fluorescent Label Aids Whole-Brain Imaging In Vivo

A new permanent fluorescent label allows researchers to study complex neural activity in wide swaths of brain tissue in moving animals. Developed at the Howard Hughes Medical Institute, the label frees scientists from the need to use a microscope to observe neuronal activity.

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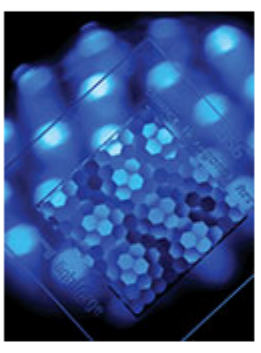
Line-Narrowed Laser Module Enables Spin-Exchange Optical Pumping



In the past several decades, medical imaging has made huge strides. The field of MRI in particular has seen huge advancements in technical capability. Researchers continue to bring MRI to bear on new medical problems, continually expanding the range of conditions with which the technology can assist in diagnosis.

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Featured Products

Simplified Laser Integration

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.

More info >>

Custom Laser Module

Necsel

The IR-RGB-V Matrix platform allows you to customize up to eight lasers in a module with the cost and performance metrics to enable your next product.

More info >>

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.

More info >>

SPECTRA X Light Engine

Lumencor, Inc.

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

More info >>

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.

More info >>

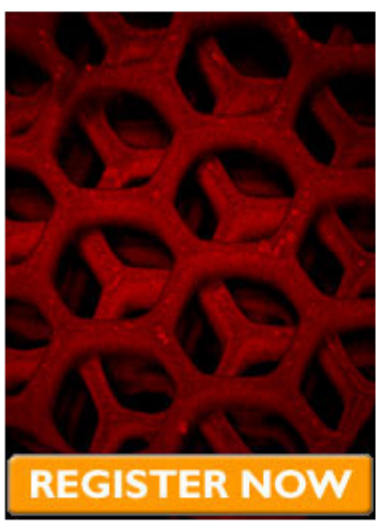
FemtoFiber dichro design bioMP

TOPTICA Photonics, Inc.

Multiple-wavelength ultrashort pulses from a single fiber laser for multiphoton microscopy.

More info >>

WEBINAR



Light-Assisted 3-D Bioprinting of Micro- and Nanoscale Functional Biomaterials

Thursday, March 19, 2015, 1 p.m. EST

FREE WEBINAR

Dr. Shaochen Chen

Femtosecond laser nanoprinting and projection 3-D bioprinting techniques allow the direct writing of 3-D designer scaffolds used for tissue engineering and regenerative medicine. These 3-D biomaterials are functionalized with precise control of micro-architecture, mechanical (e.g. stiffness and Poisson's ratio), chemical and biological properties. Design, fabrication, and experimental results will be discussed.

Industry Events

PITTCON 2015 - March 8 – 12, 2015 · New Orleans, LA

Visit Photonics Media at Booth 1336

Pittcon 2015, the 66th annual Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, will continue to strive to feature a comprehensive coverage of all aspects of analytical science and instrumental analysis. Scientists and educators will have the opportunity to hear about recent scientific advances, get updated on leading edge applications and techniques and network with world class researchers.

More info >>

CALLING ALL BIOPHOTONICS INNOVATORS!

Photonics Media is seeking presenters for "Biophotonic Imaging for Medicine," a free digital conference to be held June 11. We invite presentations from researchers, clinicians and engineers working at the graduate, doctoral and professional levels. Topics of interest include light-sheet microscopy, optical coherence tomography, photoacoustics, computational imaging and more. Visit www.photonics.com/bioconference to find out more and submit an abstract.