Wednesday, April 24, 2019

BIOPHOTONICS

BRINGING LIGHT TO THE LIFE SCIENCES®

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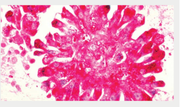
PHOTONICS MEDIA

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.

Upconversion Materials Empower Thermal Bioimaging



Bioimaging is a fundamental technique for research in the life sciences, and it is used routinely in the medical industry. The procedure itself encompasses many different methods, such as electron microscopy, x-ray tomography, and magnetic resonance imaging, which are becoming increasingly popular. However, optical microscopy has advantages over these other methods: It is versatile and relatively inexpensive. For these reasons, fluorescence microscopy remains an essential tool for bioimaging in research laboratories.

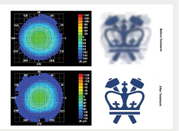
Read Article

IR Light Illuminates Biotech Manufacturing

Medicine and biotech industries make and utilize high volumes of custom pieces, including prosthetics, implants, personalized medicine, and large-scale medical devices. Getting these products to market faster and more efficiently can save millions in revenue. However, production today is often bogged down by complex manufacturing processes with numerous iterative steps that contribute to long development cycles and process inefficiencies.

Read Article

Ultrashort-Pulse Lasers: Emerging Tools for Biomedical Discovery



From nonsurgical vision correction to multiphoton imaging to neuronal optogenetics, ultrashort-pulse lasers — also informally known as ultrafast lasers — have become essential tools in biomedical discovery.

Read Article

Featured Products

The Next Generation Comes to Light

Lumencor Inc.
Lumencor's new Spectra III Light Engine.

- Breadth: Eight spectrally optimized sources for DAPI, 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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Cleared Tissue Objective

Applied Scientific Instrumentation Inc.
The Cleared Tissue Objective is an immersion objective lens specifically designed for light sheet microscopy of cleared tissue samples (ct). The objective can be used with any ASI Light Sheet Microscopy configuration, enabling isotropic resolution without manipulating the sample. The 0.4 N.A. multi-immersion objective is designed for dipping media RI ranging from 1.33 to 1.56, >1 mm field of view,...

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Cobolt Skyra™: The New Multi-line Laser

Cobolt AB
Cobolt AB, a part of HÜBNER Photonics, proudly market releases the Cobolt Skyra™, a revolutionary multi-line laser platform. With up to 4 wavelengths permanently aligned in a single compact package (70 x 134 x 38 mm) and requiring no external electronics, the Cobolt Skyra™ will enable the next generation...

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1P/2P Super-Res TIRF Dichroic

IDEX Health & Science - Semrock Optical Filters
As multiphoton microscopy has increasingly become the norm within the microscopy community, the need to combine multiphoton and single-photon excitation has risen as a necessity for many emerging protocols. Effortlessly switch between confocal and multiphoton microscopy with Semrock's newest 1P/2P super-resolution/...

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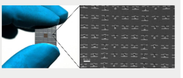
In Case You Missed It

Microscopic Robots Made from Silicon, Powered by Light



Using novel nanofabrication techniques, researchers from the University of Pennsylvania and Cornell University have built micro-robots made from silicon and powered by solar cells. One million functional microscopic robots can be produced from a 4-in. silicon wafer.

Read Article

Melanoma Blood Vessel Changes Detected with OCT Imaging

An international team of researchers has proven that dynamic optical coherence tomography (D-OCT) imaging of melanoma reveals changes to the blood vessels that correlate with the depth of its invasion, which could lead to a faster method of rapidly assessing the severity of a melanoma.

Read Article

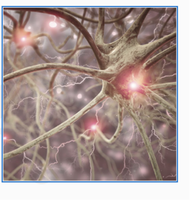
2D Circuits On Smooth Surfaces Could Aid Next-Gen Biosensors

Atom-flat sensors, made from 2D materials, could be used to monitor performance without adding weight or hindering signal flow if they could be seamlessly integrated onto surfaces with different geometries where detection for near-field signal is desired.

Read Article

Webinars

Spectroscopic OCT: Seeing Under the Skin with Depth-Resolved Spectroscopy



Tue, May 14, 2019 1:00 PM - 2:00 PM EDT

This webinar, presented by Adam Wax, Ph.D., will introduce new methods for evaluating skin injury using spectroscopic measurements based on coherence imaging. These methods were developed by Wax and his group at the Biomedical Interferometry, Optics and Spectroscopy (BIOS) lab at Duke University. Wax will discuss spectroscopic OCT (SOCT), an extension of OCT technology for analyzing structural as well as spectroscopic information. He will present his lab's application of SOCT for burn injuries and also address SOCT's potential in the area of cancer detection.

Register Now

Coming in May...

Features
Optics and Deep Learning, Computational Imaging, Absorption Spectroscopy, Biomedical Research

Photonics Media is currently seeking technical feature articles on a variety of topics for publication in our magazine *BioPhotonics*. Please submit an informal 100-word abstract to Senior Editor Justine Murphy at Justine.Murphy@photonics.com or use our online submission form www.photonics.com/submitfeature.aspx.

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