Wednesday, April 26, 2017

BIOPHOTONICS

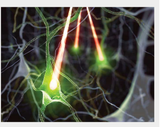
BRINGING LIGHT TO THE LIFE SCIENCES®

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.

In Optogenetics, Femtosecond Lasers Blaze New Paths

One of the most active and exciting areas in neuroscience is the use of optogenetics to unravel how neural pathways in the brain process and transmit information. Optogenetics involves the use of light-sensitive opsins — a special class of membrane-embedded proteins. Opsins are switchable channels or pumps for specific cations or anions with on or off states determined by irradiation with light of an appropriate wavelength.



Read Article

Advances in Surgical Microscopes Pave the Way to Improved Outcomes

By integrating intelligence, video, intraoperative-imaging and navigation technologies, today's surgical microscopes provide surgeons with insights to improve their decision-making at the point of care and provide patients with the best possible outcomes.

Read Article

Point-of-Care Photonics Deliver Vital Care in Developing Regions

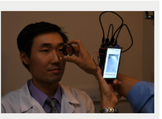
Nowhere does the burden of disease weigh as heavily on people as it does in the low-resource settings of the developing world. Photonics research and innovation are making incredible strides to alter this picture through low-cost portable optical imaging devices capable of bringing improved medical diagnostics to some of the poorest regions in the world.

Read Article

In Case You Missed It

Retina Camera, No Dilating Required

A portable inexpensive camera that can photograph the retina could replace the need for pupil-dilating eye drops. Researchers have created a prototype camera that is small enough to carry in a pocket; it can take pictures of the back of a patient's eye that can then be shared with other doctors or attached to a medical record.



Read Article

Green LED Could Provide Safe, Inexpensive Way to Treat Chronic Pain

Exposure to green LED could provide an inexpensive, non-pharmacological approach to managing chronic pain, by altering the levels of endogenous substances that potentially inhibit pain and decrease inflammation of the nervous system.

Read Article

Light Beam Replaces Blood Test During Surgery

Monitoring a surgical patient's blood with light could provide real-time status updates during life-and-death operations and could replace the need for doctors to wait while blood is drawn and tested.

Read Article

Featured Products

AvaSpec-HERO: Resolution and Sensitivity!

Avantes BV

This combination will give you an excellent instrument offering the ideal balance between sensitivity and resolution, capability of using longer integration times in low light applications yet ensuring perfect signal to noise performance.

Visit Website | Request Info

Light Sheet Microscopy (oSPIM)

Applied Scientific Instrumentation Inc.

ASI's Oblique Single Illumination Microscope (oSPIM) is an excellent platform for high resolution light sheet microscopy for samples mounted in standard coverslip-bottom culture dishes.

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Compact and Efficient Multi-Laser Engine-iChrome CLE

TOPTICA Photonics Inc.

TOPTICA's iChrome CLE is a compact laser engine that combines four laser lines in one box. All integrated colors are provided via one polarization-maintaining single-mode fiber. It is available with 405, 488, 561 and 640 nm and more than 20 mW guaranteed output power after the fiber each.

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BOB – Open-Design Upright Microscope

SUTTER INSTRUMENT

The BOB microscope is a compact, single assembly that mounts to the "blue rail" with one massive, stable connection. Replacing the microscope frame with an optical rail builds in the ability to adjust the overall height of the microscope.

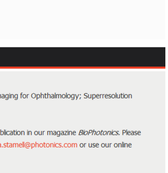
Visit Website | Request Info

Webinars

Biophotonic Tools for Diagnosing and Treating Eye Disease

Wed, May 17, 2017 1:00 PM – 2:00 PM EDT

Retinal laser therapy has had a profound impact on the treatment of diseases such as macular degeneration and diabetic retinopathy. In this webinar, Yannis M. Paulus, M.D., will discuss novel biophotonics tools and techniques for diagnosing and treating eye diseases, including retinal laser therapies and imaging. He will present significant advances in selective, reproducible retinal laser therapy and discuss Photo-Mediated Ultrasound Therapy (PUT), a novel approach using a low intensity laser concurrently with ultrasound to selectively treat blood vessels. Dr. Paulus will also speak on new imaging modalities in ophthalmology, including optical coherence tomography, photoacoustic imaging, handheld/smartphone based imaging, and molecular imaging. Dr. Paulus is an academic vitreoretinal surgeon, an assistant professor of Ophthalmology and Visual Sciences and an assistant professor of Biomedical Engineering at the University of Michigan Kellogg Eye Center. Through his research, he seeks to help physicians diagnose diseases earlier, improve treatment monitoring, and practice precision medicine tailored to each unique patient.



Register Now

Coming in May...

Features

Spectroscopic Water Quality Analysis; Fluorescence-Guided Surgical Systems; Wide-Field Imaging for Ophthalmology; Superresolution Microscopy

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 Associate Managing Editor Marcia Stamel at marcia.stamel@photonics.com or use our online submission form www.photonics.com/submitfeature.aspx.

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