Wednesday, April 26, 2023

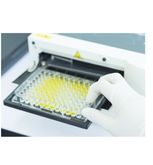
BIOPHOTONICS
BRINGING LIGHT TO THE LIFE SCIENCES℠
www.BioPhotonics.com

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.

Dynamic Light-Scattering Method Could Guide Alzheimer's Diagnosis and Treatment

The early detection of neurologic damage caused by Alzheimer's disease, before symptoms have appeared, is integral to the development of effective treatments. Early detection, made possible by leveraging dynamic light scattering to identify subtle cellular changes, could facilitate intervention that might prevent progression of the disease. It could even help plot a successful treatment. This technology could not only offer data leading to an early diagnosis of the condition but also help determine drug efficacy at an earlier stage of the disease. And beginning a regimen as soon as possible would shorten the length of drug studies, reducing the associated research costs.

Read Article



Raman Spectroscopy Identifies Disease Characteristics and In Vitro Structure

Since the invention of lasers and their integration into Raman spectroscopy systems, the spectroscopy technique has grown in popularity for use in life science and medical applications as a way to noninvasively analyze a sample and identify the component parts. The Raman effect is best measured with monochromatic light sources such as lasers because the wavelength of the scattered photons is different than that of the exciting laser source. This means that the wavelength of the light source is a key specification to consider when developing a Raman spectroscopy system.

Read Article

Researchers Test Imaging Modalities For Accessing Tooth Decay

To improve dental health, researchers at the University of California, San Francisco evaluated optical imaging techniques for their efficacy in the identification of secondary tooth decay, which can occur even if a tooth has already been filled. The researchers compared two techniques — (SWIR)radiation reflectance and thermal imaging — with measurements obtained with OCT and micro-computed tomography (MicroCT).

Read Article

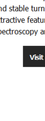
.: Featured Products & Services

AURA Light Engine: Ideal OEM Solid-State Illumination

Lumencor Inc.

Why settle for archaic bulbs and weak LEDs when optimal, solid-state performance and value are within reach? AURA Light Engine provides bright, stable, reproducible illumination for OEMs. Proprietary light sources and advanced electronics make this excitation subsystem ideal for instrument manufacturers. Customization is available upon request.

Visit Website | Request Info

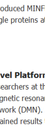


Single-Objective Light Sheet

Applied Scientific Instrumentation Inc.

Based on the OPM and SCAPE technologies and developed in collaboration with Leica Microsystems, microscope enables fast and gentle volumetric imaging of fluorescent biological samples over many time points and multiple channels, all while using conventional sample mounting.

Visit Website | Request Info

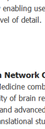


TracePro 2023 Released!

Lambda Research Corporation

TracePro 2023 by Lambda Research Corporation is a comprehensive software with new features for illumination and optical design, including CAD and lens design importers. TracePro offers tools for designing medical devices, automotive lighting, illumination, display backlights, and more.

Visit Website | Request Info

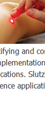


KeyLight™ by Phoseon Technology

Phoseon Technology Inc.

KeyLight™ is a compact light source that supports 3-7 channel fluorescence microscopy systems. It brilliantly illuminates your results by delivering intense, broad-spectrum UV and visible wavelengths for a wide variety of colors between 340 nm and 760 nm.

Visit Website | Request Info

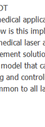


Optikos Contract Manufacturing

Optikos Corporation

Optikos is ready, bring your next optical product to market, from design through manufacture, starting from any point in the product development process. And at the end of the process, you own the design. Certified to ISO 13485:2016 and 9001:2015.

Visit Website | Request Info



Ultrafast Fiber Lasers with <50 fs

HUBNER Photonics GmbH

HÜBNER Photonics' VALO Aalto femtosecond fiber lasers have pulse durations of <50 fs and peak powers of >2 MW from compact and stable turn-key systems. The lasers have very attractive features for applications in bioimaging, spectroscopy and micro-machining.

Visit Website | Request Info

.: In Case You Missed It

Superresolution Method Captures Conformational Changes in Proteins

Researchers led by Nobel laureate Stefan Hell at the Max Planck Institute for Medical Research have developed a superresolution microscope with a spatiotemporal precision of 1 nm/ms. The work builds upon the team's recently introduced MINFLUX superresolution microscopy technology, now enabling users to observe the miniscule movements of single proteins at what the researchers called an unprecedented level of detail.

Read Article

Novel Platform Reveals Insights into Large-Scale Brain Network Control

Researchers at the University of North Carolina (UNC) School of Medicine combined fiber photometry with functional magnetic resonance imaging (fMRI) to examine the dynamic activity of brain regions related to the brain's default mode network (DMN). With the help of Stanford University scientists — and advanced computational modeling — the researchers obtained results that could provide a more informed model for translational studies.

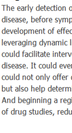
Read Article

Research Project Will Track Tumors with Quantum Imaging

A project funded by the German Federal Ministry of Education and Research will investigate the viability of quantum optical imaging for tumor diagnostics. Nine project partners, including TU Darmstadt, will explore the issue in the €6.7 million ($7.2 million) "Quancer" project under the framework program "Quantum Technologies: From the Basics to the Market."

Read Article

.: Upcoming Webinars



Medical Laser Applications: Defining Measurement Solutions That Keep the Process on Track

Wed, May 17, 2023 11:00 AM - 12:00 PM EDT

As with any precision process, laser-based medical applications demand tight control of a laser's behavior to keep the process on track but how is this implemented in applications? Mark Slutzki of Ophir, in addition to presenting interesting medical laser applications, maps out the process for identifying and configuring the appropriate monitoring and measurement solutions as well as the most intelligent approaches to implementation. This is often not a trivial task but the result is a model that can be used equally well in other laser applications. Slutzki shares how to define a laser process monitoring and controlling solution, using the medical field as a reference application but also considering the elements that are common to all laser-based applications. Presented by Ophir.

Register Now

.: Next Issue:

Features

Microscopy & Cardiology, OCT & Cardiology, Spectroscopy & Cardiology, and more.

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 Doug Farmer at Doug.Farmer@Photonics.com, or use our online submission form www.photonics.com/submitfeature.aspx.

About *BioPhotonics*

BioPhotonics is the global resource for research, business and product news and information for the biophotonics community and the industry's only stand-alone print and digital magazine.

Visit Photonics.com/subscribe to manage your Photonics Media membership.

View Digital Edition | Manage Membership