Wednesday, April 28, 2021

BIOPHOTONICS
BRINGING LIGHT TO THE LIFE SCIENCES®

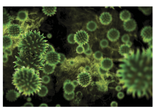
PHOTONICS MEDIA photonics.com

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.

Diode Array Spectrometers Augment Fluorescence-Based Research

Fluorescence spectroscopy is an established method for detecting concentrations of biological material in medicine or in environmental analysis. The key benefit of using fluorescence over other techniques of spectral analysis such as UV absorbance is that fluorescence can detect orders-of-magnitude smaller concentrations of a proteins, disease, and other elements than UV absorbance can.

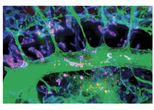
Read Article



Superresolution Microscopy Analysis Accelerated by Machine Learning

Superresolution optical microscopy — a technology that enables the acquisition of fluorescent micrographs of samples with a resolution well below the optical diffraction limit of ~250 nm — is rapidly evolving. Several methods have been developed during the past two decades that allow for this extension of conventional optical microscopy, and they have substantially contributed to the overall understanding of systems as complex as the specific arrangement of chromatin in cells during interphase, or resolving the inner structure of polymer networks in microgels.

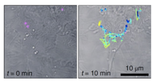
Read Article



Raman Holography Has Implications for Live Cell, Tissue Interrogation

Researchers from the Institute of Photonic Sciences have successfully demonstrated holographic Raman microscopy. The technology is poised to support wide-ranging applications, from live cell and tissue interrogation to, potentially, anti-counterfeiting.

Read Article



.: Featured Products

C-FLEX C8: Up to 8 Lasers Combined!

HÜBNER Photonics

HÜBNER Photonics announces an expansion of the C-FLEX laser combiner family with the introduction of the C8. The C-FLEX C8 is designed to integrate up to 8 Cobolt lasers making it ideal for solutions in bioimaging, Raman spectroscopy and holography.

Visit Website | Request Info

Light Sheet for Cleared Tissue

Applied Scientific Instrumentation Inc.

A flexible and easy-to-use SPIM configuration optimized to image large cleared samples. The sample is mounted horizontally on an XYZ stage. Two multi-immersion objective lenses are held in an upright "V" geometry for light sheet illumination and detection.

Visit Website | Request Info

Think BIG; Go Small with XENON's X-1100 Benchtop Research System

XENON Corp.

You have discoveries to make, theories to be proven, and challenges to overcome. Who'd have thought that the Pulsed Light tool to provide such big answers could come in such a small package. The X-1100 Benchtop Pulsed Light System is XENON's ground-breaking research tool...

Visit Website | Request Info

Ocean HDX Raman Spectrometer

Ocean Insight

The Ocean HDX-Raman is a compact, high-performance spectrometer for 785 nm Raman excitation applications. This small-footprint instrument unlocks Raman signature data from 150 cm-1 to 3400 cm-1 and can be combined with a laser, probe, and sample holder to measure solids, powders and liquids.

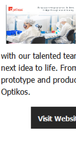
Visit Website | Request Info

RM21® MicroMirror TIRF Microscope

Mad City Labs Inc.

The MicroMirror TIRF microscope is a unique single molecule microscope. Spatial separation of the excitation and emission beams and the use of broadband micromirrors leads to superior signal-to-noise ratios for multi-wavelength TIRF microscopy.

Visit Website | Request Info



Bring Your Product to Life

Optikos Corporation

Have a project in mind? Work with our talented team of engineers to bring your next idea to life. From concept and design to prototype and production, you can do it all with Optikos.

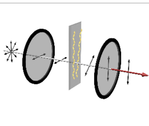
Visit Website | Request Info

.: In Case You Missed It

Chirality and Nanotechnology Speed Up Light-Based Drug Screening

A team of international collaborators has introduced a drug-screening technique that relies on nanostructure chirality as its fundamental property. (Chirality is a quality that, for a physical object, means it cannot be superimposed on its mirror image; think "left hand/right hand.") The new technique uses gold nanorods to twist light, and a red glow can indicate the failure of a medication aimed at treating diseases such as Type 2 diabetes and pancreatic cancer.

Read Article



Light-Controlled Enzymes Show Potential in Medicine, Industry

Research conducted at the University of São Paulo's Chemistry Institute demonstrated the utility of near-infrared and infrared light for use as catalysts in the control of enzymes. The work holds implications for the noninvasive treatment of diseases such as Parkinson's and Alzheimer's.

Read Article

Light Delivers Hydrogen from Nonphotosynthetic Microorganisms

A team in Portugal has introduced a method for the sustainable conversion of solar energy into hydrogen, relying on biohybrid systems — combinations of nonphotosynthetic materials, bacteria, and semiconductor nanoparticles. The ability of those bacteria to produce high levels of hydrogen, paired with the cadmium sulfide nanoparticles' efficiency in capturing light, initiated a direct energy transfer that the researchers said demonstrated a replicable and sustainable fuel-generation process.

Read Article

.: Upcoming Webinars

Quantitative CMOS Imaging – qCMOS: The Dawn of a New Era

Wed, May 19, 2021 11:00 AM - 12:00 PM EDT

Imaging in general and semiconductor imaging in particular has penetrated every aspect of our lives, especially in the sciences. It has empowered many experiments from relying on subjective recording into objectively documentable, repeatable and quantifiable methods. This webinar with Peter Seitz, Ph.D., will provide an overview of semiconductor image sensors and introduce photon-resolving quantitative imaging, or qCMOS. Presented by Hamamatsu Corporation.

Register Now

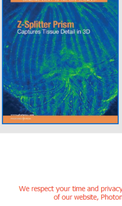
.: Next Issue:

Features

Lyme Disease Detection, Multiplex Illumination, Lasers In Light Sheet Illumination, 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