Wednesday, October 27, 2021

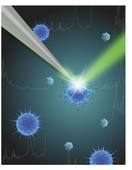
BIOPHOTONICS
BRINGING LIGHT TO THE LIFE SCIENCES®

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.

NIR Fluorescence Captures Clear Images of Cancerous Tumors During Surgery

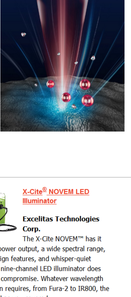
Despite the efficacy of surgery in cancer treatment, the disease can reappear. If the pathological report describes positive reactive margins in the area where surgery occurred, a second intervention may do more harm than good. Depending on the patient's postoperative status, he or she may not be able to tolerate a second significant surgery. But near-infrared fluorescence can help to negate the need for more surgery.



Read Article

Plasmonic Tip Detects Viruses' Raman Signal

Scientists and health experts searching for a tool that will help in the diagnosis of COVID-19 today as well as prepare for the pandemics of tomorrow may soon find a solution in a suite of techniques based on the Raman effect. Raman spectroscopy relies on the optical read-out of rich and molecule-specific, fingerprint-like spectra of molecular vibrations. This technology can be applied to chemical identification and sensing. And now coherence-enhanced and plasmonic tip-enhanced Raman spectroscopies have been applied to diagnostics.



Read Article

Opto-Refrigerative Tweezers Overcome Heat Damage to Particles

A tweak to optical tweezer technology introduced by researchers at the University of Texas at Austin fixes the problem of heat that affects the tool. The prolonged interaction with the laser beam can alter molecules and particles or damage them with excessive heat in optical tweezer technology. The tweak could lead to new research and simplify processes for using optical tweezers.

Read Article

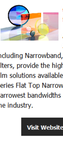
.: Featured Products

Compact Fluorescence Imaging Modules for your Instrumentation Project

Etaluma Inc.

Our powerful commercial-ready fluorescence microscope modules use modern LED excitation, multi-bandpass filters, and CMOS cameras to solve your custom imaging needs. We provide easy integration in the minimum space for analytical and clinical instrumentation development.

Visit Website | Request Info



X-Cite® NOVEM LED Illuminator

Excelitas Technologies Corp.

The X-Cite NOVEM™ has it all. With high-power output, a wide spectral range, convenient design features, and whisper-quiet operation, this nine-channel LED illuminator does everything but compromise. Whatever wavelength your application requires, from Fura-2 to IR800, the X-Cite NOVEM has you covered.

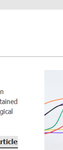
Visit Website | Request Info

Supercharged Calcium Imaging and Beyond

CoolLED Ltd.

After the phenomenal popularity of the 8-channel pE-800 LED Illumination System, CoolLED took a closer look at expanding this ground-breaking technology for the calcium imaging community by swapping in a 340 and 380 nm LED.

Visit Website | Request Info

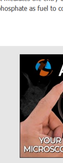


Bring Your Product to Life

Optikos Corporation

Decades of service in the optics industry have given us a proven track record of innovative and practical problem solving that serves the development needs of a diverse portfolio of life sciences clients.

Visit Website | Request Info



Cobolt Tor™ XE Pulsed Laser

HÜBNER Photonics

HÜBNER Photonics is proud to introduce the Cobolt Tor™ XE, a high performance compact Q-switched laser at 1064 nm and with 0.5 m.J/pulse. The Cobolt Tor™ XE is intended for integration into instruments for marking, laser induced breakdown spectroscopy (LIBS) as well as photoacoustic microscopy applications....

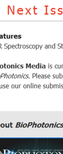
Visit Website | Request Info

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

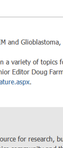


Light Sheet for Cleared Tissue

Applied Scientific Instrumentation Inc.

The ct-dSPIM is a flexible and easy-to-use light sheet microscopy configuration optimized for imaging large cleared tissue samples. The sample is mounted on a motorized XYZ stage and imaged via stage scanning. Two multi-immersion or other objective lenses are held in an upright "V" geometry for light sheet illumination and detection.

Visit Website | Request Info



Alluxa Ultra Series Filters and Coatings

Alluxa

Alluxa Ultra Series Filters, including Narrowband, Dichroic, UV, IR, and Notch filters, provide the highest performance optical thin film solutions available today. For example, the Ultra Series Flat Top Narrowband filters offer the narrowest bandwidths and squarest filter profiles in the industry.

Visit Website | Request Info

.: In Case You Missed It

Light-Tracked Bio Device May Find Use in Space Applications

Researchers at the Indian Institute of Science (IISc) and the Indian Space Research Organization have developed a modular, self-contained device to cultivate micro-organisms. The work could enable biological research in outer space.

Read Article

Fluorescent Sensors with Noncanonical Amino Acids Could Broaden Sensor Use in Biological Studies

Although fluorescence tools for biological study abound, some processes, such as the interactions between proteins and metabolites, are challenging to investigate with the tools that currently exist. However, a research group led by professor Jeremy Mills at Arizona State University (ASU) is working to change that by using a fluorescent noncanonical amino acid to generate new proteins.

Read Article

Scientists Confirm Dynamin Molecular Motor's Constriction Mechanism

A team at Kanzawa University used the measurement technique of single-molecule fluorescence resonance energy transfer, or smFRET, as well as a computable model, to develop a method that determined the strength of an individual dynamin motor. Dynamin, which refers to a family of biomolecules, is a protein that is a central player in endocytosis — a process that mediates the entry of diverse particles into cells, from nutrients to viruses. Its primary activity is to use guanosine triphosphate as fuel to constrict and cut membrane tubes.

Read Article

.: Upcoming Webinars

Semiconductor Position-Sensitive Detectors (PSDs): Technology and Applications

Thu, Nov 4, 2021 1:00 PM - 2:00 PM EDT

Oleks Goushcha, Ph.D., lead scientist for semiconductor devices at OSI Optoelectronics, provides an in-depth look into semiconductor position-sensitive detectors (PSDs). This talk covers the design and applications of both segmented and lateral-effect Silicon and InGaAs PSDs used for optical beam position detection. Presented by OSI Optoelectronics.

Register Now

.: Next Issue:

Features

NIR Spectroscopy and Stroke, Lasers and Epilepsy Treatment, FLIM and Glioblastoma, 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