Wednesday, May 24, 2017

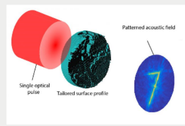
BIOPHOTONICS

BRINGING LIGHT TO THE LIFE SCIENCES®

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.

Optoacoustics, 3D Printing Form Sound Fields With Specific Shapes

A method for generating ultrasound via light, coupled with 3D printing, has demonstrated the ability to form sound fields with specific shapes, for potential use in biological cell manipulation and drug delivery. This method could provide a simpler, less expensive alternative to the use of piezoelectric arrays to produce sound waves.



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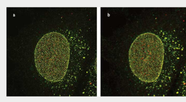
Challenges and Opportunities in Superresolution

In the last 15 years, scientists have begun using superresolution microscopy techniques to image living phenomena beyond Abbe's theoretical limit. In a relatively short time, these techniques and instruments have become popular in the study of far-ranging biological phenomena. Superresolution can be an ideal solution for biologists who need to resolve structures beyond the diffraction limit of optical microscopy, including those whose specimens are incompatible with electron or atomic force microscopy.



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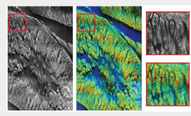
FLIM Delivers Intracellular Images Based on Differences

Fluorescence lifetime imaging microscopy (FLIM) enables researchers in the life sciences to get information from live specimens about interactions on the molecular scale. The technique captures the differences in the excited state decay rate from a fluorescent sample, rather than relying on the concentration of a fluorophore. Since imaging does not derive from the intensity of a signal, the technique lessens the impact of photon scattering in thick layers of sample and is generally considered more robust than intensity-based methods.



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In Case You Missed It

Probe Could Deliver Optoelectronic Stimulation, Enable Better Understanding of Spinal Cord

A rubber-like fiber that can flex and stretch with the human spine while delivering both optical impulses and electrical connections for stimulation and monitoring of the spine could be used in the study of spinal cord neurons and potentially to help restore spinal cord function.

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Laser Scribing Builds Molecular Biosensor

Graphene electrodes that act as effective biosensors have been created using a laser to burn patterns into a polymer sheet.

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LZH Plans Optogenetics Network

Optogenetics combines optics and genetic engineering for progress in biomedical sciences and other areas, and the network aims to pool the competencies of relevant research fields to unlock the potential of light-controllable biomolecules in combination with up-to-date light technology.

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Featured Products

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.

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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. The oSPIM is a single-view light sheet system where the illumination light sheet is generated at an oblique angle using an oil immersion objective below the sample dish.

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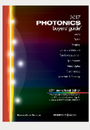

The 2017 Photonics Buyers' Guide - Special Offer

Photonics Media

If you buy products and services related to lasers, optics, imaging, sensors, detectors, test and measurement, light sources, fiber optics, spectroscopy, materials and coatings -- you need the Photonics Buyers' Guide. Our editors verify all 4000+ company listings annually.

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C-FLEX Laser Combiner

HUBNER GmbH & Co. KG

HÜBNER Photonics are proud to introduce a new compact and flexible laser combiner, C-FLEX. The C-FLEX laser combiner is available with up to 6 wavelengths from a selection of 30 wavelengths over the visible spectrum.

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Webinars

Perspectives in 3D Confocal Raman Imaging

Tue, May 30, 2017 11:00A EDT

This webinar, presented by WITec, will show the workflow and power of confocal Raman imaging for analyzing the chemical composition, crystallinity, stress, optoelectronic and structural properties of materials and organisms. It will introduce state-of-the-art developments in confocal Raman imaging, including user-friendly automated features and the ability to extract information from the data set more easily, leading to improved analyses. It will also cover recording surface topography of rough and uneven surfaces using WITec's TrueSurface technology. A live data evaluation of measured data sets will demonstrate the power of confocal Raman imaging today. Presenter Thomas Dieing, Ph.D., is director of applications and support at WITec GmbH in Ulm, Germany.

Register Now

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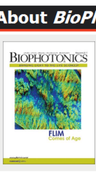

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