Wednesday, April 22, 2020

BIOPHOTONICS

BRINGING LIGHT TO THE LIFE SCIENCES®

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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. Manage your Photonics Media membership at Photonics.com/subscribe.

Spectroscopic Technique Targets Drug Porosity

In the pharmaceutical field, porosity is an important trait in helping to measure the effectiveness of tablet quality. Thanks to modern spectroscopic techniques, manufacturers are getting the characteristics they're looking for. Porosity, in addition to other properties such as surface area, particle size, and solubility, is a primary contributing factor in the dissolution rate of tablets. Through this attribute, producers and researchers are able to obtain an initial indication of liquid absorption and, therefore, dissolution properties of pharmaceutical tablets.

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The Microscope Enters the Digital Age

Since its early development, the microscope has undergone little change in optical design, while the optical resolution theoretical limit was already achieved many decades ago. But change is happening, as augmented reality is being incorporated into the way microscopes are used in the laboratory setting.

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2-Photon Microscopy Shows Learning Involves Various Areas of Brain

To explore how learning and memory-building take place in the brain, scientists at Johns Hopkins University School of Medicine used a laser-assisted imaging tool to monitor and measure levels of AMPAR molecules, which help send messages between neurons, in mouse brains. Their experiments, they said, add to evidence that motor-based learning can occur in multiple areas of the brain, even in areas not typically associated with motor control.

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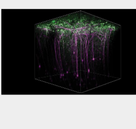

Featured Products

Multi-Immersion Objectives

Applied Scientific Instrumentation Inc.

ASI and Special Optics have developed two dipping objective lenses designed for light sheet microscopy of cleared tissue samples, including ASI's ct-dSPIM. These objectives work in any refractive index media without a correction collar because of a unique curved first surface. They are robust to immersion in harsh media including DBE and BABB.

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CELESTA Light Engine

Lumencor Inc.

Lumencor's Celesta Light Engine delivers exceptional brightness and speed. This laser-based, solid-state illuminator is designed to support today's most demanding multidimensional fluorescence microscopy applications. Generating ~1000 mW/color at the distal end of a 1.5 mm fiber,..

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Engineering Services for Life Sciences

Optikos Corporation

From concept to volume production — you can do it all with Optikos. 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.

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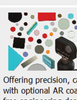

Custom Colored Glass Filters

Opticology Inc.

For over 20 years we've designed and supplied custom Colored Glass Filters for research and industry. Offering precision, calibrated density and bandpass filters with optional AR coatings in any size or shape. We provide free engineering design assistance with every order.

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Light Source for Optogenetics

CoolLED Ltd.

The highly controllable CoolLED pE-4000 Illumination System is ideal for optogenetic stimulation, with researchers in Hungary delivering fast, precisely timed sequences of light and advancing their discoveries in neuroscience.

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818-MSCOPE Microscope Slide Photodiode Sensor

MKS/Newport

The 818-MSCOPE measures the optical power at the sample plane in a microscopy setup. The silicon photodiode measures from 350 to 1100 nm at optical powers ranging from 3µW to 1W and is designed to be a microscopy power sensor...

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New Lasers for Life Science and Quantum Technologies

HUBNER Photonics

HÜBNER Photonics is proud to announce an expansion of the Cobolt 06-01 Series of plug and play modulated lasers. The expansion includes twelve additional wavelengths covering 405 nm – 975 nm, as well as higher powers on several existing wavelengths: 405 nm with 365 mW, 445 nm with 400 mW, 457 nm with 400 mW, and 515 nm with 150 mW.

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Computational Photonics with Microsoft® Excel®

Photonics Media

This book shows how Excel — readily available on almost every computer — can be used to study photonics problems and to design, analyze, and optimize photonics applications. Excel comes with all the necessary ingredients: a full range of mathematical functions, excellent graphics and user-interface...

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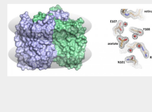
In Case You Missed It

Recently Discovered Protein Family Could Find Role in Optogenetics

Researchers from the Moscow Institute of Physics and Technology, working with colleagues in Spain, France, and Germany, have determined and analyzed the high-resolution structure of a protein from the recently discovered heliorhodopsin family. Microbial rhodopsins play a key role in optogenetics, a technique that involves the introduction of these photosensitive proteins into the membranes of neurons.

Read Article



Photothermal Ablation of Endometriosis Possible Using Nanomedicine

Using photoresponsive nanoparticles loaded with dye, researchers at the Oregon State University College of Pharmacy and the Oregon National Primate Research Center have developed a way to identify and remove lesions associated with endometriosis, a common gynecological condition in women of childbearing age.

Read Article

Olympus Announces 2019 Light Microscopy Award

Olympus has announced the winners of its first Global Image of the Year Life Science Microscopy Award. Ainara Pintor of Spain earned first place for her vibrant image of an immunostained mouse brain slice with two fluorophores, titled "Neurogarden."

Read Article

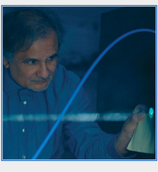
Webinars

Startup Life at Luminate: Advantages of an Optics-Specific Accelerator from the Cohort's Point of View

Thu, Apr 30, 2020 1:00P EDT

What are the advantages of participating in an accelerator dedicated to optics, photonics, and imaging (OPI) technology? This webinar will provide an inside look at Luminate through the perspectives of four startups in the accelerator's current cohort — from their January 2020 start in Rochester, N.Y., through the move to virtual workshops in response to COVID-19. If you're an OPI startup — from early stage to Series A funding — or a scientist or engineer with technology that's moving from lab to market, learn how Luminate can provide the funding and resources to launch a successful OPI business and speed commercialization.

Register Now



Next Issue:

Features

Diffuse Optical Spectroscopy, NIR Imaging, Selective Plane Illumination Microscopy, 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.

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