

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

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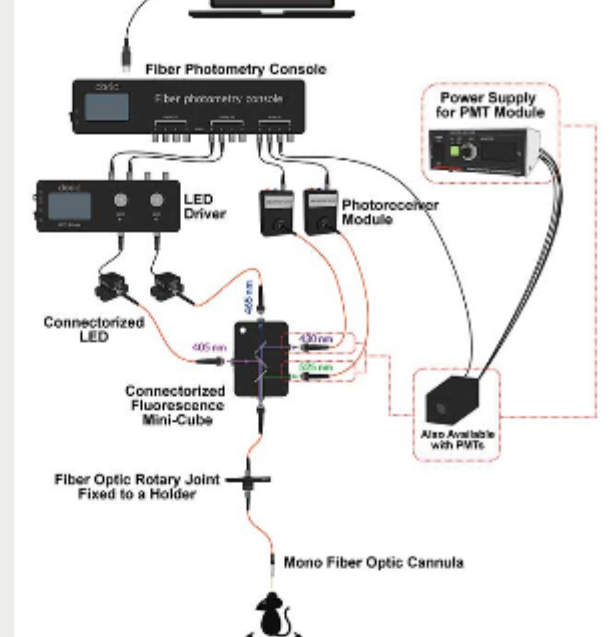
Bringing 10 years of **INNOVATION** to solid state lighting

Embedded Vision Moves Into the Clinical Realm
 Embedded vision, the combination of miniaturized processing units and board-level cameras, has the potential to create a new tool for medical monitoring and diagnostics. The hardware design can make medical devices faster, more compact and more user-friendly. It can enable point-of-care testing because the technology replaces the industrial PC with processing boards. It also promises to significantly reduce the total cost of ownership per device.



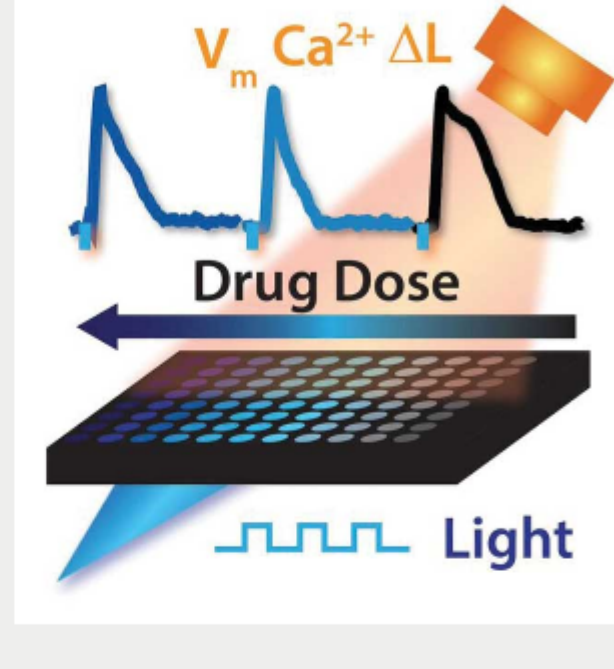
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Making the Connection: Optics, Neural Activity and Behavior
 An international army of neuroscientists is trying to better understand the inner workings of the brain by exploring the correlations between neural activity and behavior of freely moving or partially restrained lab animals. The best method for neural activity control, activation or silencing of opsin-expressing neurons is optogenetics. The prevalent optics-based methods for monitoring the neural activity of fluorophore-labeled neurons are fiber photometry and head-mounted fluorescence microscopy.



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Cardiac Optogenetics Seeks to Fulfill Its Promise
 The next decade is going to be a telling one for those working in pursuit of cardiac optogenetics. Initial proofs have been demonstrated, the optical tools have been developed and scientific evidence has grown to a point where the tremendous potential of this technique is clear. Cardiac optogenetics holds out the promise of a wide range of clinical possibilities from halting heart attacks and treating arrhythmia to displacing the need for animal testing of drugs.



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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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Ideal OEM Illumination Platform for Biophotonics
Lumencor Inc.
 Lumencor's AURA light engine® provides a flexible platform for integration of solid-state light sources in customized configurations. The AURA light engine incorporates up to 5 light output channels that can be configured according to your application requirements. Channel selection is implemented via TTL or serial control interfaces.

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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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4-Color Laser Engine Ideal for Confocal Microscopy
TOPTICA Photonics Inc.
 TOPTICA's iChrome CLE is a compact laser engine that combines four laser lines in one box. All integrated colors are provided via one polarization-maintaining single-mode fiber. It is available with 405, 488, 561 and 640 nm and more than 20 mW guaranteed output power after the fiber each.

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Optical Biomedical Imaging
Photonics Media
 At last, a reference work has been compiled that offers in one place a broad survey of technologies, applications and markets for optical biomedical imaging, as only Photonics Media could produce it. This collection is a practical resource for those engaged in the research and development of relevant technologies.

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Combine 4 Light Sources Into a Single Beam
SUTTER INSTRUMENT
 Scientists have long requested a light source with sub millisecond switching accuracy powerful enough for fast imaging in order to accomplish their most demanding experimental protocols such as optogenetic stimulation. The Lambda 421 answers this request with integrated high power LEDs and a unique, efficient and flexible way of combining the individual beams for unprecedented high switching speed and high power light performance through a reflective pentagon based beam combiner.

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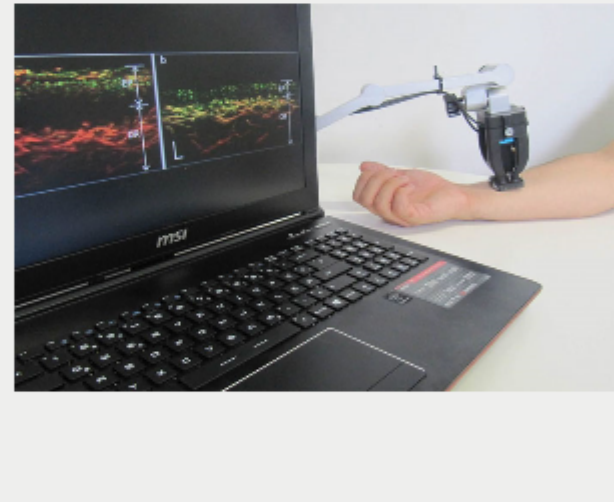
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iChrome CLE
4-color laser engine
Ideal for confocal microscopy

In Case You Missed It

Handheld Optoacoustics Device Sees Under Skin
 A handheld scanner for analyzing the skin of psoriasis patients was shown to provide clinically relevant information, such as the structure of skin layers and blood vessels, without the need for contrast agents or radiation exposure.

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GE Additive, Stryker to Collaborate in Additive Manufacturing
 Additive technology developer GE Additive and medical device manufacturer Stryker Corp. have entered a partnership agreement to support Stryker's growth in additive manufacturing.

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DLP-SLA Enables 3D Printing of Labs-on-a-Chip
 A custom 3D printer built using digital light processor stereolithography (DLP-SLA) has demonstrated the ability to print a viable microfluidic device compact enough to achieve flow channel cross-sections as small as 18 μm × 20 μm. The 3D printer has a resolution of 7.6 μm and uses a 385-nm LED.

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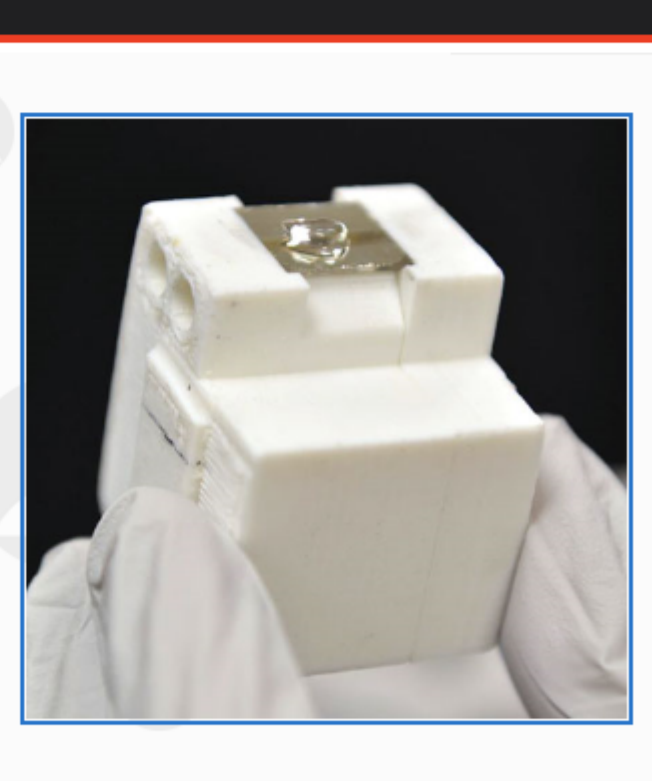
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Dec. 2-6, 2017 | Philadelphia, PA
 Submit an abstract/register for THE forum in cell/molecular biology.
[#ascbemb017](#)

Webinars

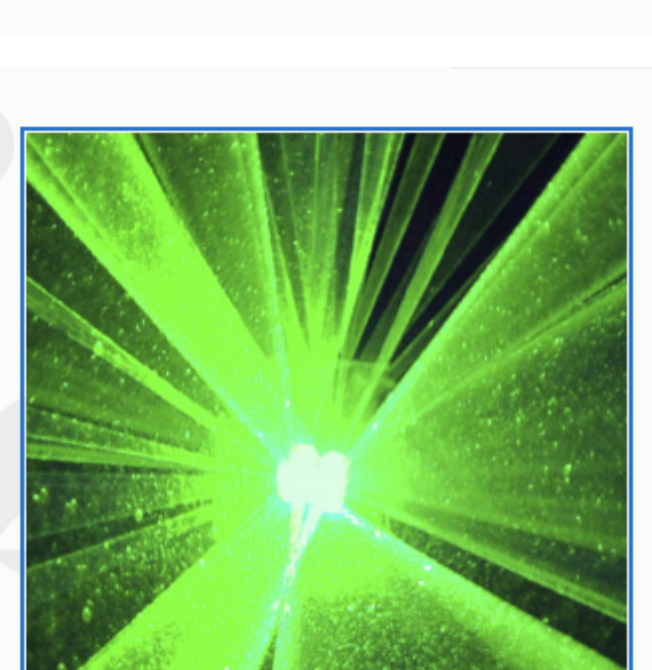
Making Laser-Based Dermatologic Procedures Safer and More Effective
 Thu, Nov 2, 2017 1:00 PM - 2:00 PM EDT
 This webinar will introduce sonoillumination, a technique that uses ultrasound in conjunction with a clinical laser for dermatologic procedures such as the removal of birthmarks and tattoos. Sonoillumination transmits light through direct contact with the skin. The ultrasound is applied through the procedure to further improve effectiveness by increasing the transmission of light through the epidermis by as much as 174 percent. The presenters will review current approaches to laser-based dermatological treatments, then discuss sonoillumination, the experimental methods used to test the device, and results.

[Register Now](#)



Practical Solutions for Laser Safety
 Tue, Nov 14, 2017 12:00 PM - 1:00 PM EST
 This webinar will explain the most important elements of laser safety and provide practical advice on how to implement a laser safety program in a research, academic and/or product development laboratory setting. Presenter Ken Barot, a laser safety consultant and long-standing expert in the field, will present a number of lessons he has learned on lab design for a safe environment and laser accident prevention. He will also address common misconceptions about laser safety, before opening the floor to questions from attendees.

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Coming in October...

Features
 Optogenetics; Single-Molecule Localization Microscopy; UV Sanitation; Microscopes for Forensic Pathology

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 Associate Managing Editor Marcia Stamell at marcia.stamell@photonics.com or use our online submission form www.photonics.com/submitfeature.aspx.

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