

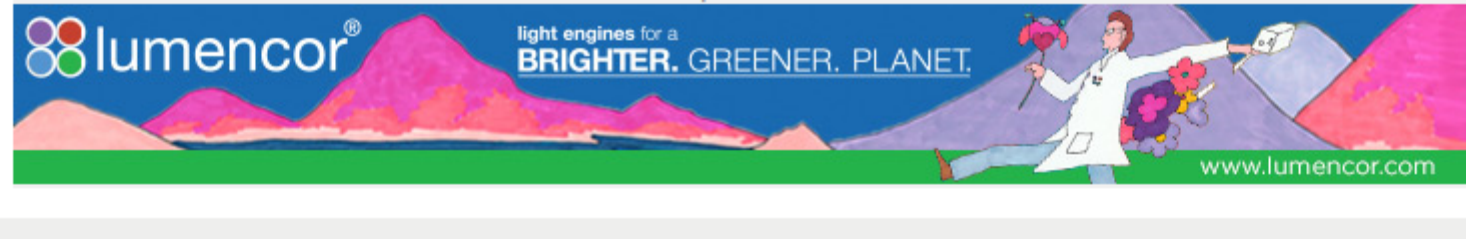
BIOPHOTONICS

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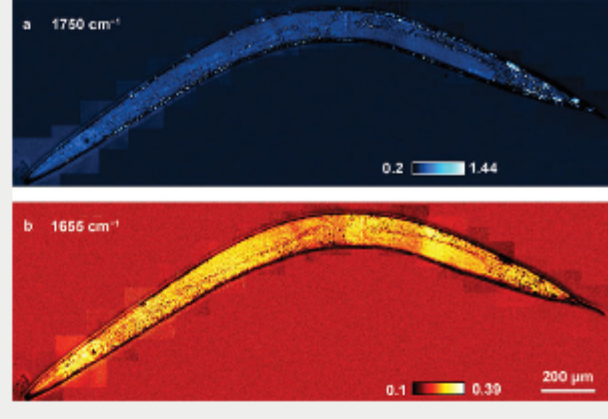


Monthly newsletter focusing on how light-based technologies are being used in the life sciences. Includes news, features and product developments in lasers, imaging, optics, spectroscopy, microscopy, lighting and more. Manage your Photonics Media membership at Photonics.com/subscribe.



Photothermal IR Spectroscopy Boosts Chemical Microscopy, Expands Applications

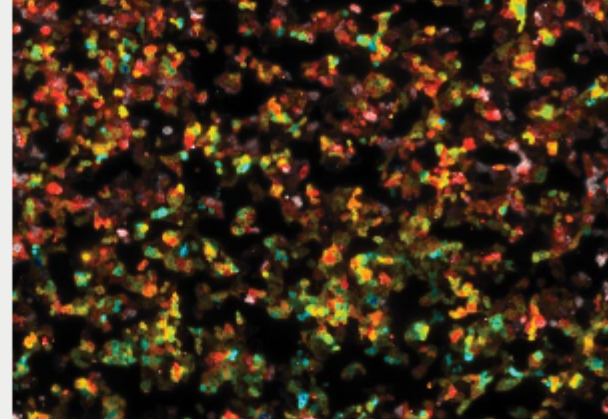
IR spectroscopy was once limited to sensing molecular vibrational absorption for chemical specificity. Now, IR spectroscopy-based photothermal microscopy is finding broader uses. Current bioanalysis largely relies on tissue homogenization and separation, followed by various assays. Without spatial and temporal dynamics information, the way in which molecules execute their functions in a living system remains unknown.



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Advanced Imaging Techniques Enhance Fluorescence Sensing

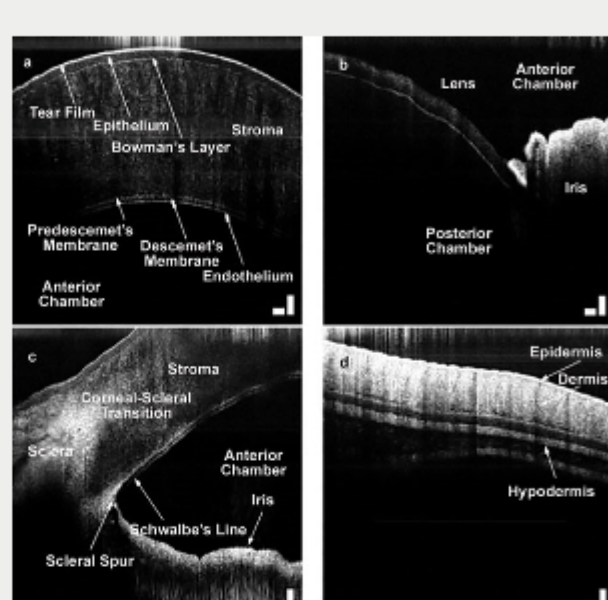
New developments in imaging technology, in combination with advanced microscopy techniques, are enabling new applications for fluorescence sensing. For example, by combining light sheet fluorescence microscopy with super-slow-motion imaging, it is now possible to construct a 3D representation of a sample.



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OCT Promising as Clear Point-of-Care Solution

Optical coherence tomography has emerged as a robust tool in the comprehensive diagnosis of medical conditions, but it needs to be more accessible and affordable for practitioners. Medical devices at the point of care allow clinicians to do what they do best: determine a patient's exact condition and a course of treatment. These technologies work best when they fit seamlessly into the provider-patient workflow without a steep learning curve or worry about the underlying scientific principles, and without the high cost seen for so many medical technologies.



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Featured Products

It Just Keeps Getting Better....

Lumencor Inc.
Lumencor's new SOLA SE nIR Light Engine with added Cy7 excitation.

- Breadth: UV + visible + nIR light: 350–760 nm
- Brightness: ~ 4.0 W optical output
- Control: Light on/off and graduated intensities
- Ease: No maintenance, no consumables, mercury-free

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Tunable Lens Focus Device

Applied Scientific Instrumentation Inc.
Our Tunable LENS system consists of the C60-TUNELENS- 4F assembly along with the TGTLC card of the TG1000 controller. The system lets user remotely control the focus of the system without moving the objective. C-Mounts are used to mount the C60 Tunable 4F assembly to the imaging camera and to the microscope's photo port.

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Introducing the Lumedica OQ PathScope

Lumedica
Lumedica is proud to introduce the newest member to its low-cost OCT imaging OQ Series lineup: The OQ PathScope. OCT (Optical Coherence Tomography) is a valuable bench tool for pathology teams that want to process and analyze their histological sections with a smarter, more efficient workflow.

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NEW pE-4000 with Enhanced Intensity

CoolLED Ltd.
The CoolLED pE-4000 now benefits from our award winning sustainable Green technology. This provides enhanced intensity where it matters for imaging and dramatically reduces the power consumption. Every pE-4000 boasts 16 selectable LED sources arranged conveniently in 4 channels, using our patented wavelength grouping concept.

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C-FLEX Laser Combiner

Cobolt AB
The C-Flex laser combiner from HÜBNER Photonics, the youngest division of HÜBNER GmbH & Ko. KG, is a compact and flexible laser combiner. The C-FLEX is available with up to 6 wavelengths from a selection of 30 wavelengths.

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Compact, Low Cost <30pm Resolution in the VIS and NIR

LightMachinery Inc.
The Hornet Spectrometer achieves the resolution of large grating spectrometers at a fraction of their cost and size while covering a larger wavelength range. Simple PC based software allows the user to review spectra in real time and save or export for more analysis.

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TUNABLE LENS FOCUS DEVICE

- Mounts via C-mount, or in any infinity path
- Z- sections can be obtained without moving sample or objective
- Uses an inexpensive USB camera and software to provide XYZ positioning coordinates to ASI controller to move XY stage and Z positioning device to auto track sample in XYZ. Cycle time is 20 Hz.
- Fully supported in Micro-Manager software

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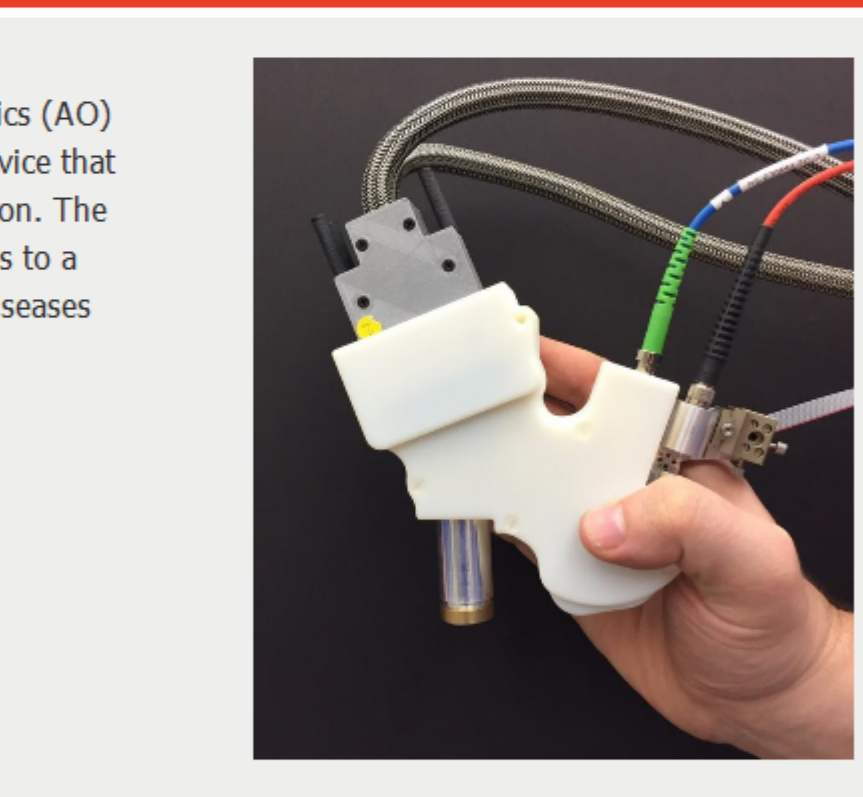
ASCB | EMBO 2018 meeting
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In Case You Missed It

Hand-Held Imager Could Broaden Use of AOSLO

Researchers at Duke University have miniaturized adaptive optics (AO) technology to develop a portable hand-held ophthalmology device that can image individual photoreceptors in the eye at high resolution. The new instrument could allow improved diagnosis of eye diseases to a larger population and enable early detection of brain-related diseases and trauma.

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Optical Trapping and Raman Spectroscopy Are Combined to Measure Live Cell Interaction

Using multiple laser beams and Raman spectroscopy, researchers at the Universities of Nottingham and Glasgow have designed and built a new instrument that could help scientists learn more about how organisms take hold and how antibiotic-resistant bacterial biofilms are formed.

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5D HSI Measures Shape and Spectral Characteristics as a Function of Time

A 5D hyperspectral imaging system has been developed by a team at Friedrich Schiller University Jena and the Fraunhofer Institute for Applied Optics and Precision Engineering, in collaboration with a group from Ilmenau University of Technology.

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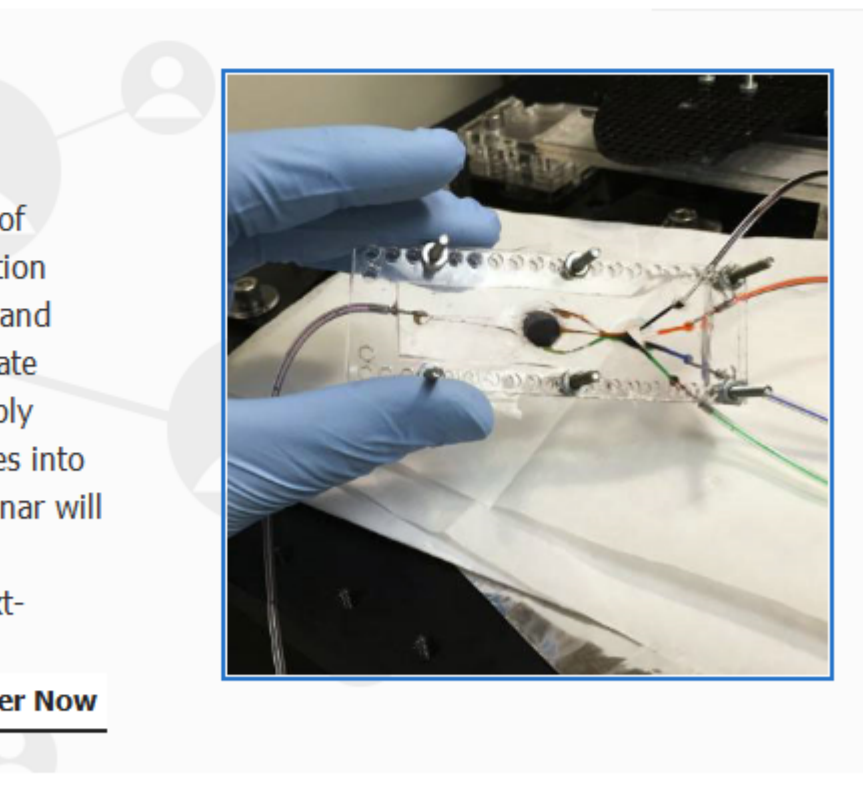
Webinars

Emerging Organ Models and Organ Printing for Regenerative Medicine

Mon, Oct 1, 2018 1:00 PM - 2:00 PM EDT

In this webinar, you will learn about the development and use of hydrogels to regulate cell behavior and the use of microfabrication methods, such as microfluidics, photolithography, bioprinting, and molding to regulate the architecture of materials used to generate miniaturized tissues. The presenter will discuss directed assembly techniques developed by his lab to compile small tissue modules into larger constructs in order to create tissue complexity. The webinar will conclude with a look at how current work in the area of organ modeling and bioprinting could lead to the development of next-generation regenerative therapeutics and biomedical devices.

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Coming in October...

Features
Neurophotonics for Brain Mapping and Therapy; The Search for the Bionic Eye; Multimodal Imaging; Optical Testing for Medical Devices

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