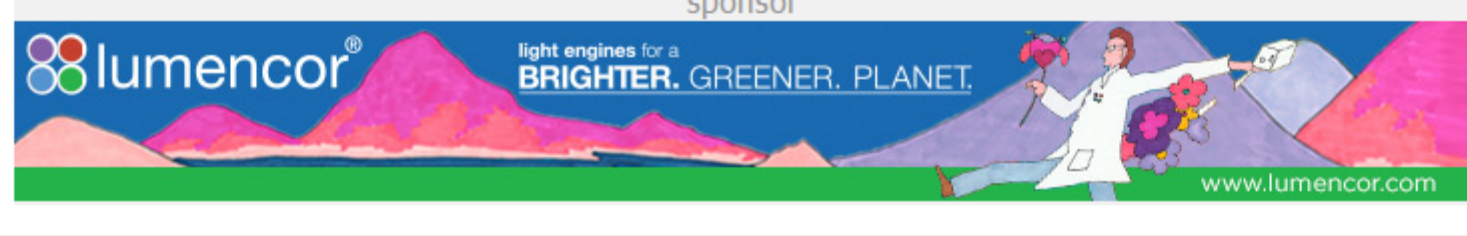


# BIOPHOTONICS

BRINGING LIGHT TO THE LIFE SCIENCES®

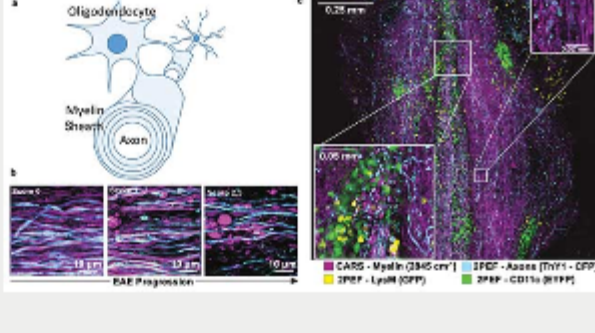


Monthly newsletter focusing on how light-based technologies are being used in the life sciences. Includes news, features and product developments in lasers, imaging, optics, spectroscopy, microscopy, lighting and more. Manage your Photonics Media membership at [Photonics.com/subscribe](http://Photonics.com/subscribe).



## Polarization-Resolved CRS Reveals Lipid Disorder at the Molecular Scale

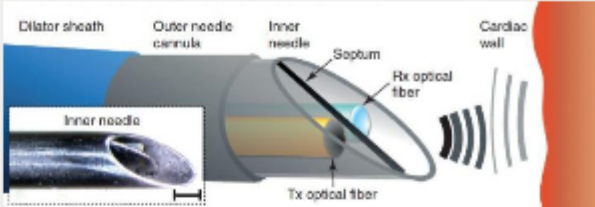
Imaging myelin in vivo is typically done by MRI. However, the spatial scale is far above the single axon. Researchers seek better resolution methods able to evaluate quantitatively and noninvasively demyelination processes at early stages and at small scales. Among the optical methods there is a growing interest in coherent Raman scattering (CRS) microscopy, which presents the advantage of being sensitive to specific chemical vibration bonds with submicrometric resolution.



[Read Article](#)

## All-Optical Ultrasound Transducer Could Transform Keyhole Surgeries

An optical ultrasound needle has been developed that allows heart tissue to be imaged in real-time during keyhole procedures. The technology was successfully used for minimally invasive heart surgery on pigs, giving a high-resolution view of soft tissues up to 2.5 cm in front of the instrument, inside the body.



[Read Article](#)

## Biomedical OEM Lasers Meet Trends in Therapeutics

Lasers service a diverse range of biomedical applications, ranging from cosmetic fat removal and eyesight-saving photocoagulation to clinical blood cell counting. The major market driver for medical therapeutics has long been the aging "baby boomer" population of the Western regions of the world. The demands of this demographic have included medically necessary treatments, as well as aesthetic and other elective procedures.



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## Featured Products



### Eight Bright Solid-State Light Sources

**Lumencor Inc.**  
Lumencor's new SPECTRA III Light Engine® is here, with

- Eight independent solid-state light sources

- Spectrally optimized DAPI, CFP, GFP, YFP, Cy3, mCherry, Cy5 and Cy7 excitation
- ~0.5W per output channel from a standard liquid light guide

[Visit Website](#) [Request Info](#)



### Dual Light Sheet Microscopy

**Applied Scientific Instrumentation Inc.**  
ASI's Dual Selective Plane Illumination Microscopy for Cleared Tissue (ct-dSPIM) is one of many light sheet microscope configurations possible using our modular components.

This flexible and easy-to-use Selective Plane Illumination Microscopy (SPIM) implementation allows for dual views of large samples.

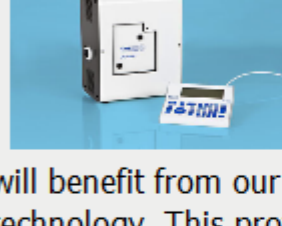
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### Cobolt Skyra™: The New Multi-line Laser

**Cobolt AB**  
Cobolt AB, a part of HÜBNER Photonics, proudly market releases the Cobolt Skyra™, a revolutionary multi-line laser platform. With up to 4 wavelengths permanently aligned in a single compact package (70 x 134 x 38 mm) and requiring no external electronics, the Cobolt Skyra™ will enable the next generation of compact and easy-to-use analytical instrumentation for the life science market.

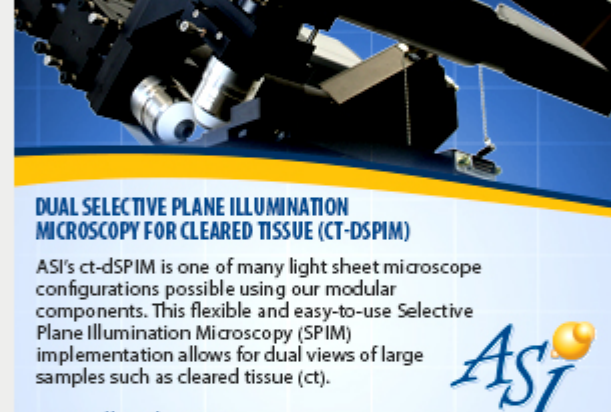
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### NEW pE-4000 with Enhanced Intensity

**CoolLED Ltd.**  
In April 2018 the CoolLED pE-4000 will benefit 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...

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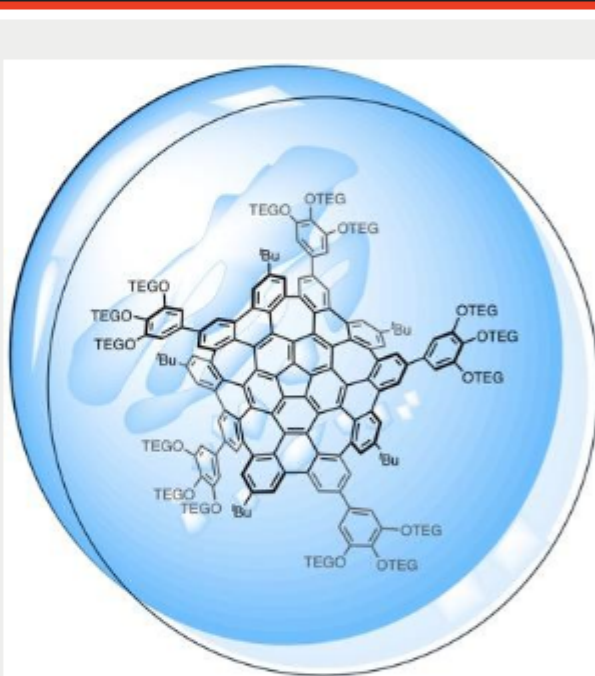
sponsors



## In Case You Missed It

### Nanocarbon Shows Promise for Fluorescent Bioimaging

Researchers have developed a flexible, water-soluble warped nanographene molecule that is biocompatible. The molecule was also found to induce cell death when exposed to light. The new molecule could expand the biological applications for nanocarbons, including cancer cell imaging and treatment.



[Read Article](#)

### A New Use for Deep Learning — Hologram Reconstruction

Researchers have used a deep learning-based, computational approach to reconstruct a hologram and form a microscopic image of an object. This deep learning-based technique rapidly eliminates twin-image and self-interference-related artifacts using only one hologram intensity. It also uses fewer measurements to reconstruct improved phase and amplitude images of the objects.

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### 3D Printing Technique Replicates Biological Structures

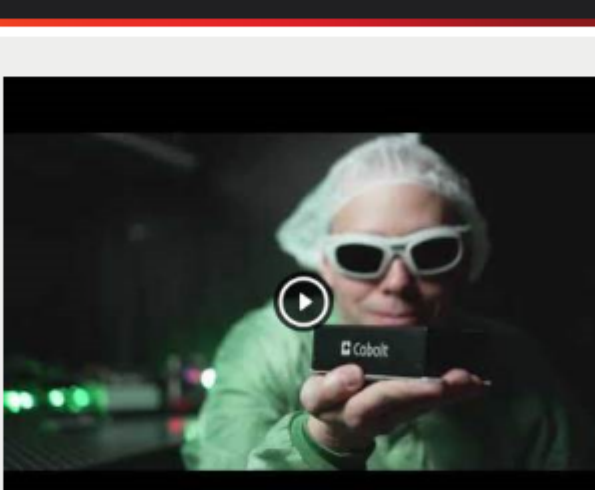
A 3D printing technique that replicates biological structures could be used for tissue regeneration and replica organs. The technique creates structures that are soft enough to mimic the mechanical properties of organs such as the brain and lungs.

[Read Article](#)

## Featured Video

### Cobolt Skyra - The New Multi-line Laser

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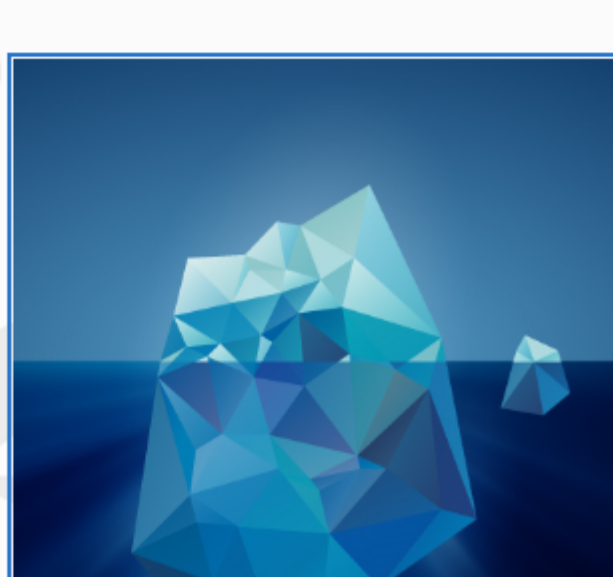
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## Webinars

### Synthetic Sapphire: Properties, Use and Selection

Thu, Apr 26, 2018 1:00 PM - 2:00 PM EDT  
Sapphire, the hardest natural substance next to diamond, is stronger than many other optical materials. In this webinar you will learn all about synthetically grown sapphire and the range of applications for which it is an appropriate, and in some cases a superior, choice. The webinar will discuss the differences between sapphire and glass and how to select the type of synthetic sapphire that is right for your application.

[Register Now](#)



## Coming in April...

### Features

Swept-Source OCT; Photoacoustic Spectroscopy; Biomedical Remote Sensing; Live-Cell Imaging

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](mailto:marcia.stamell@photonics.com) or use our online submission form [www.photonics.com/submitfeature.aspx](http://www.photonics.com/submitfeature.aspx).

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