

# BioPhotonics

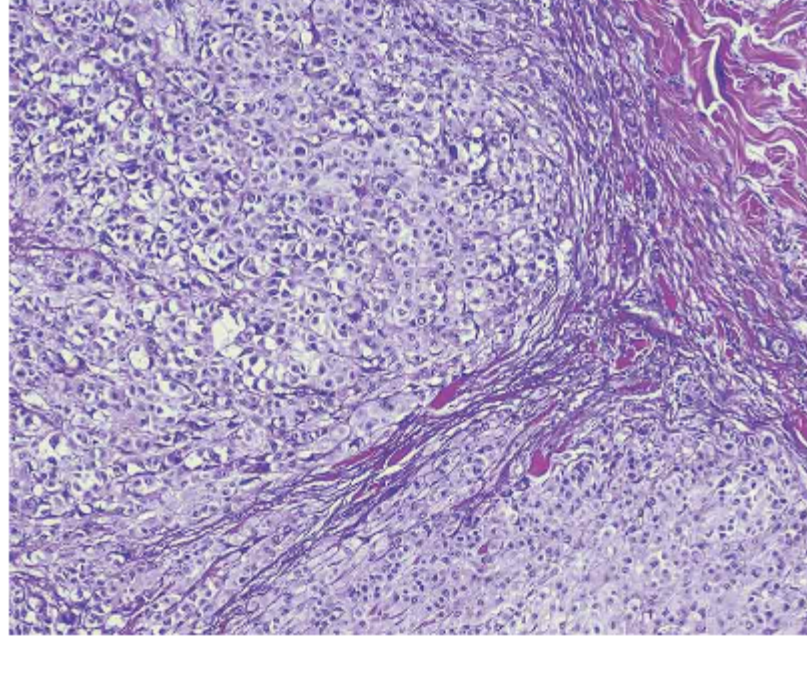
Bringing Light to the Life Sciences®

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 [BioPhotonics.com/subscribe](http://BioPhotonics.com/subscribe).

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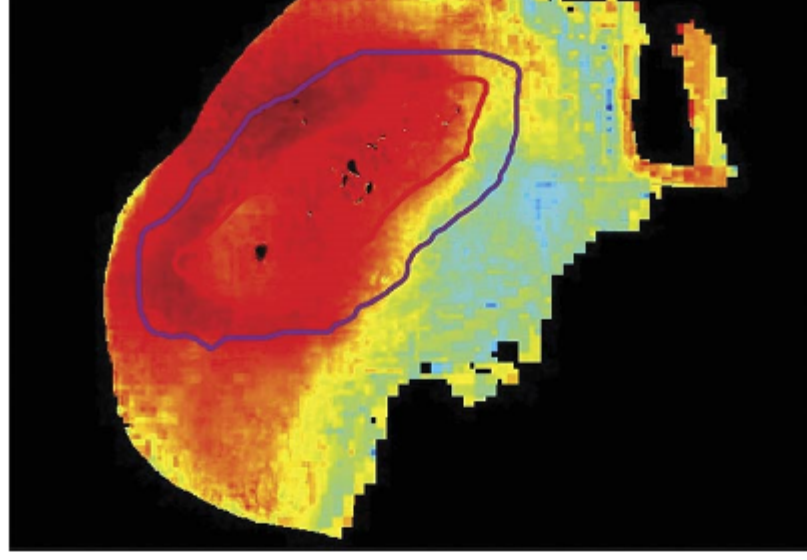
• Microscope Automation • Precision Components • Nanopositioning Devices • OEM Solutions



## Raman and Laser-Induced Breakdown Spectroscopy Augment Chemical Analysis

Raman spectroscopy and laser-induced breakdown spectroscopy (LIBS) are two laser-based optical methods that provide complementary insights into the chemical composition of materials. Raman spectroscopy identifies molecular structures by detecting how light scatters when it interacts with chemical bonds. In contrast, LIBS reveals elemental composition by using a high-energy laser pulse to produce a microplasma from the sample, then analyzes the light emitted by the resulting excited atoms and ions.

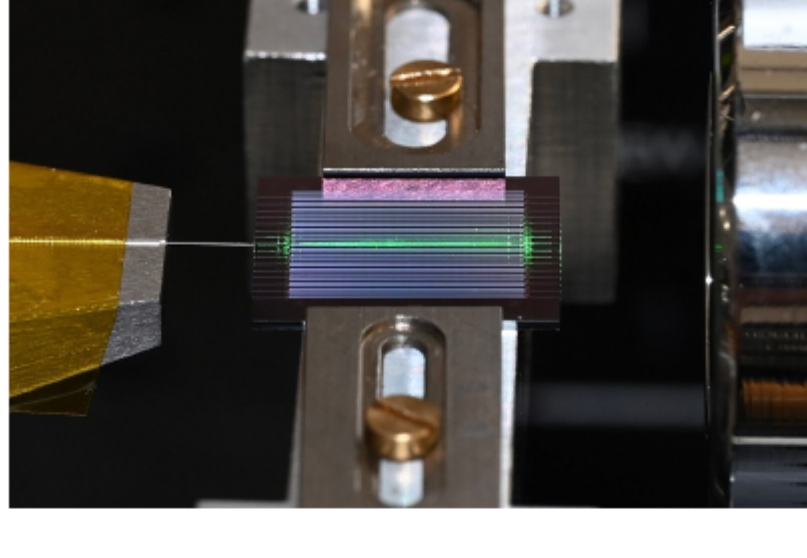
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## Smartphone-Based NIRS Imaging Classifies Wounds

Diabetes mellitus affects >32.2 million people in the U.S. and an additional 12.5% of the U.S. population is prediabetic<sup>1</sup>. One in three people with diabetes is affected by diabetic foot ulcers (DFUs) during their lifetime<sup>2</sup>. If this condition is undiagnosed or untreated, DFUs become infected and require amputation, thus reducing the lifespan of these patients. In a clinical setting, visual assessment is the gold standard, but current smartphone technologies for wound care are limited to 2D/3D wound image analysis for size or depth.

[Read Article](#)



## Caltech Research Enables Coherent Spectral Broadening On-Chip

Broadband, coherent light sources are highly valued in R&D. But until now, they have been difficult to achieve without bulky, inefficient tabletop devices. A Caltech team led by professor Alireza Marandi developed an efficient solution to integrating a broad spectrum of frequencies on a microchip. Using an optical parametric oscillator, the team demonstrated multi-octave frequency comb generation on a nanophotonic

device with a threshold of only femtojoules of pump energy. [Read Article](#)

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**CONFERENCE**

**October 14-16, 2025**  
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## Featured Products & Services



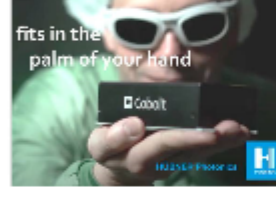
### Unique Research Needs

### Unique Microscopes

**Zaber Technologies Inc.**  
Customize your optical path and easily integrate lasers, spectrometers, additional filters, beamsplitters and more. Program easier with our free API, with sample code in Python, LabView + 6 languages. Standalone systems start at \$30k. Your tech questions are answered in 1 business day and lead times are under 2 weeks.

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### Powerful Multi-Line Laser -

**100 mW**

**HUBNER Photonics GmbH**  
HÜBNER Photonics

announces power scaling and wavelength expansion of the Cobolt Skyra™ - the world's first true multi-line laser platform. The Cobolt Skyra™ offers up to 4 laser lines permanently aligned between 405 - 785 nm, now with up to 100 mW for all colours, perfectly suited for fluorescence-based life science instrumentation or Raman spectroscopy.

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### Ultra-Stable Microscope Stages

**PI (Physik Instrumente)**  
LP, Motion Control, Air Bearings, Piezo Mechanics

The ultra-stable microscope stage integrates 10 nm encoders and a self-locking, drift-free design. It delivers high dynamics from 0.1 µm/s to 120 mm/s, offers excellent performance at the right price, and supports diverse applications with a wide range of accessories.

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### Custom Microscopes and Optical Systems

**Prior Scientific Inc.**  
Prior Scientific has developed OpenStand to offer a working platform to build OEM

solutions and one-off customizations with excellent value for money and reduced development time. Whether developing new automation techniques and software or developing new imaging methods, you can quickly find that you need a microscope system tailored to your application.

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### BrixXHUB Ultra Laser Light Engine

**Omicron-Laserage**  
Laserprodukte GmbH

Experience flexibility and reliability with the BrixXHUB Ultra by Omicron-Laser — the proven plug & play solution for widefield laser applications. Up to 6 lasers, advanced modulation options, and seamless integration ensure optimal performance in diverse setups.

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### NAN™ Open-Design Microscope

**Sutter Instrument**  
The Sutter Instrument NAN™

is a focusing-nosepiece microscope designed for electrophysiology and material science. The microscope frame has been reimaged around Sutter manipulator gantry stands, which allows for many possible configurations to match bespoke application needs. The microscope can be configured with a single filter cube or a complete Olympus epi-illuminator, binocular or trinocular head, various transmitted light LEDs, and with OCC or IR-DIC.

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## More News

### PicoQuant Invests in Microscopy Startup FluoBrick Solutions

PicoQuant, a photonic components and instruments manufacturer, invested in FluoBrick Solutions, a startup specializing in single-molecule techniques. FluoBrick Solutions develops ready-to-use instruments for studying proteins and oligonucleotides at the single-molecule level. With this investment, PicoQuant intends to make complex scientific methods and instruments accessible to broad research communities. [Read Article](#)

### Prior Scientific Acquires Kinetic Systems

Prior Scientific, a microscopy and photonics solutions provider, acquired Kinetic Systems, a manufacturer of precision vibration isolation systems and optical tables. The acquisition adds vibration isolation technology to Prior Scientific's existing instrumentation portfolio. [Read Article](#)

### TiHive Raises \$9.3M to Advance Terahertz-AI Vision Technology

TiHive, a deeptech company focused on Terahertz-AI vision systems, has raised €8 million (\$9.3 million) to accelerate growth and expand internationally. The company's technology combines industrial-grade silicon-based terahertz imaging devices and AI to enable real-time, non-destructive, see-through quality and process control on production lines. [Read Article](#)

## Latest Webinars

### Intraoperative PS-OCT in Cancer Surgery in Dogs and Cats

**Thu, Nov 6, 2025 1:00 PM - 2:00 PM EST**

Surgery is a cornerstone of cancer treatment in dogs and cats, but assessing tumor margins has long relied on slow, limited histopathology. Polarization-sensitive OCT (PS-OCT) offers a real-time, non-invasive solution for intraoperative margin evaluation. Clinical trials in dogs and cats demonstrate that PS-OCT accurately distinguishes tumor tissue from surrounding structures, enabling immediate surgical intervention when margins are incomplete. This approach may reduce repeat procedures, lower patient morbidity, and ease financial burdens for pet owners. Sponsored by Thorlabs.

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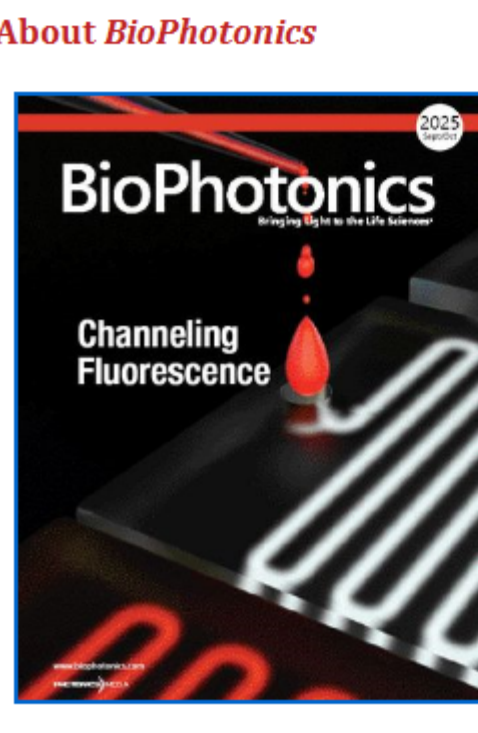
## Next Issue

### Features

Multiphoton Microscopy & Neurology, NIR Spectroscopy & Neurology, Fluorescence Lifetime Imaging & Neurology

**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](mailto:Doug.Farmer@Photonics.com), or use our online submission form [www.photonics.com/submitfeature.aspx](http://www.photonics.com/submitfeature.aspx).

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