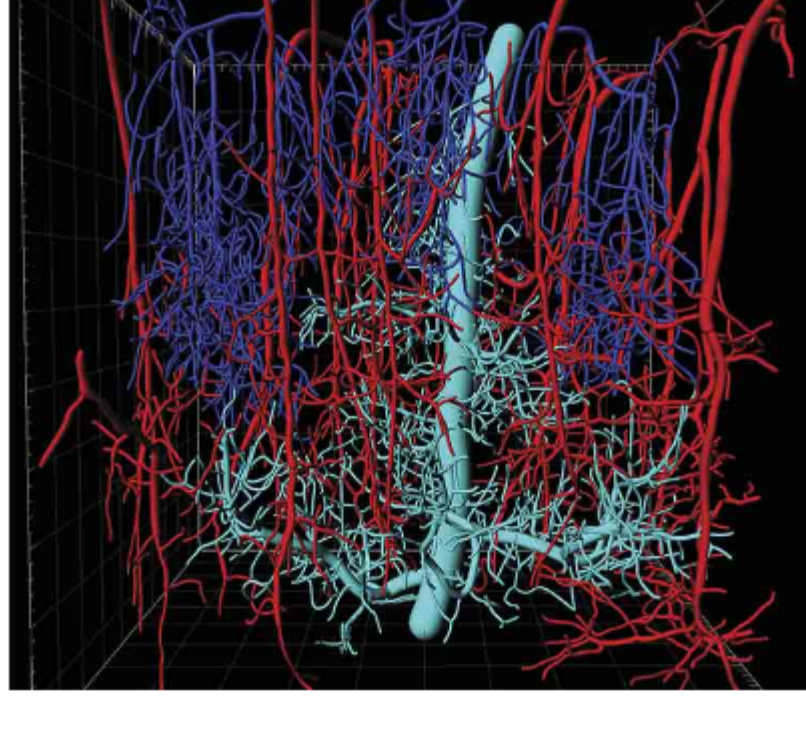


BioPhotonics

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.



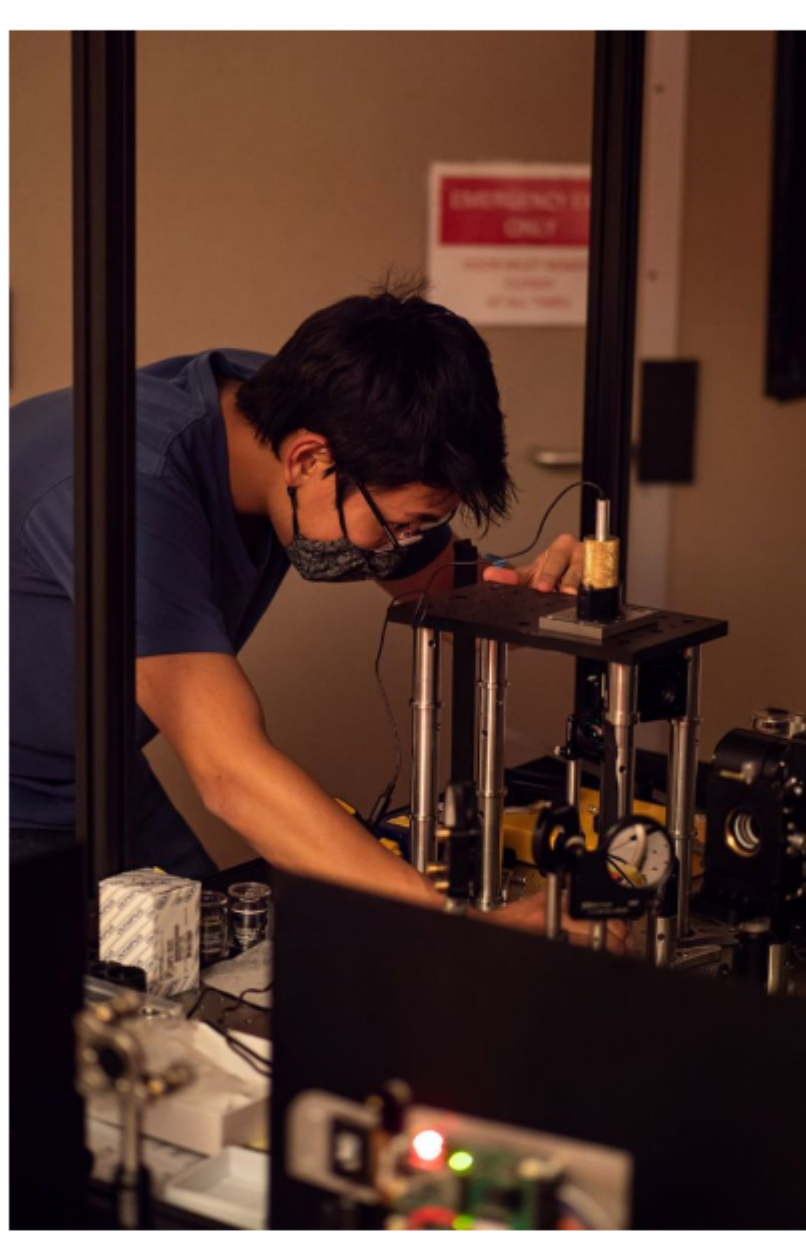
Multiphoton Microscopy Provides a Deeper View of the Aging Brain

Because deep-brain structures are key to how the nervous system communicates and maintains healthy function, understanding them is crucial for studying neurovascular dynamics, age-related changes, and neurodegenerative diseases. Multiphoton microscopy has become a widely used tool for imaging the mouse brain in neuroscience, particularly for visualizing neurons and vasculature. Its advantage compared with other technologies lies in its ability to deliver live-cell images and reveal active cellular processes as they occur, rather than only providing static details. [Read Article](#)



Fiber Optics Clarifies the View of Neural Activity

Optical fiber was once relegated to simple light delivery and collection in medical instruments, often for exploratory procedures. Today, this fiber winds its way into all manner of instrumentation in the laboratory and clinic, capturing health data from complex — and often hard-to-reach — biological systems. The data then reveals information ranging from temperature and blood flow to cellular signaling for diagnostics. [Read Article](#)



Multifocus Microscope Pushes Limits of 3D Imaging

A high-speed 3D imaging microscope developed by researchers at the University of California, Santa Cruz can capture detailed cell dynamics of an entire small whole organism at once. The ability to image 3D changes in real time over a large field of view could lead to new insights in developmental biology and neuroscience. “Traditional microscopes are constrained by how quickly they can refocus or scan through different depths, which makes it difficult to capture fast, 3D biological processes without distortion or missing information. [Read Article](#)



Featured Products & Services



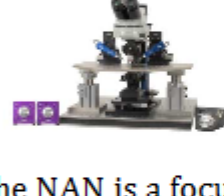
Build an Affordable Confocal System

Zaber Technologies Inc.

Achieve high-resolution confocal imaging without the high cost. Our guide shows you how to integrate Zaber microscopes with scanners from Crest, Yokogawa, Visitech, and Confocal.nl, plus objectives from Nikon, Zeiss, and Olympus. We cover everything from mechanical mounting to software control.

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NAN™ Open-Design Microscope

Sutter Instrument

The NAN is a focusing nosepiece microscope designed for electrophysiology. The microscope frame has been reimagined around our highly-stable adjustable MT-70 manipulator gantry stands. This design choice allows for many possible configurations to match the ever-expanding applications in the field of electrophysiology.

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Superresolution Microscopy Poster

Photonics Media

This superresolution microscopy poster features visually stunning, high-resolution images that reveal never-before-seen worlds at the sub-cellular level, illustrating the value of the techniques. Useful, at-a-glance definitions make this poster a great resource.

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HiPe SenS 640 SWIR Camera

New Imaging Technologies (NIT)

The HiPe SenS 640 is an air-cooled SWIR camera optimized for biomedical imaging, offering 10 μ s – 112 s exposure, <40 e-noise, and –20 °C TEC2 cooling. Its high sensitivity and compact design support advanced in vivo and microscopy-based life-science applications.

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More News

‘Self-Driving’ Microscope Predicts Neurodegeneration

The accumulation of misfolded and parkinson's in the brain is central to the progression of neurodegenerative diseases like Huntington's, Alzheimer's, and Parkinson's. But to the human eye, proteins that are destined to form harmful aggregates are indistinguishable from normal proteins. The formation of such aggregates also tends to happen randomly and relatively rapidly — on the scale of minutes. [Read Article](#)

Fluence Technology Secures \$7.7M Investment

Fluence Technology, a developer of femtosecond fiber lasers, has secured PLN 28 million (approximately \$7.7 million) in investments. The funds will support further development in the industrial, medical, and scientific research sectors, as well as continuing the company's international expansion. [Read Article](#)

Implant Device Communicates With Brain Through Light

Northwestern University scientists have developed a wireless device that uses light to send information directly to the brain — bypassing the body's natural sensory pathways. The soft, flexible device sits under the scalp but on top of the skull, where it delivers precise patterns of light through the bone to activate neurons across the cortex. [Read Article](#)

Next Issue

Features

Raman Spectroscopy, Femtosecond Lasers & Fluorescence, Optical Filters, Superresolution Microscopy

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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