

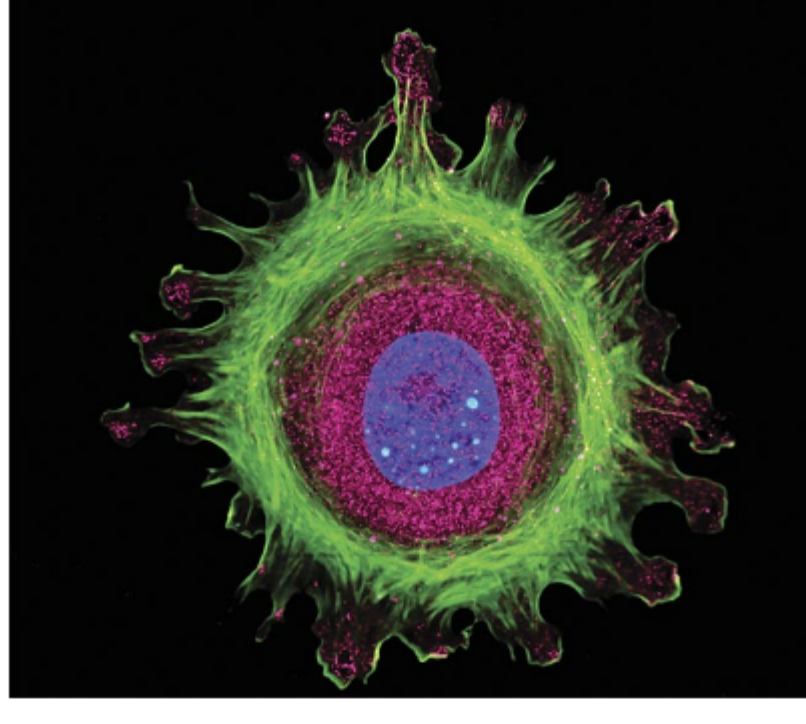
BioPhotonics

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](https://www.photonics.com/subscribe).

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Objective Specifications Drive Performance in Biomedical and Life Sciences Research

Microscope objectives are critical for a vast range of biological imaging applications, such as isolating cellular dynamics and cancer diagnostics, but designing and building a microscope objective can be a complex and expensive endeavor. The specifications chosen before starting the design, including numerical aperture and working distance, can have dramatic effects on the cost and complexity of the design and construction of the microscope system. [Read Article](#)



Raman Spectroscopy for Point-of-Care Blood Testing

Raman spectroscopy offers new possibilities for blood diagnostics, which is crucial for making timely decisions in the intensive care unit. Progressions in clinical knowledge and well-defined objectives of a technology's use guide developers toward inventive technical opportunities in a clinical setting. This synergy enables the translation of insights from both

fields into groundbreaking diagnostic processes. By merging clinical expertise with the latest instrumentation, developers can create more accurate and efficient diagnostic tools. [Read Article](#)



Quantum Sensor Could Increase Quality, Speed of MRI Scans

Researchers at the Danish Research Center for Magnetic Resonance (DRCMR) and the Niels Bohr Institute at the University of Copenhagen have developed a quantum optical magnetometer. This sensor measures high magnetic fields and is expected to increase the longevity of MRI scanners while improving their quality and lowering costs. A prototype of the sensor is currently operational at Hvidovre Hospital at DRCMR. [Read Article](#)

blazing fast 3D fluorescence imaging with subcellular resolution and standard biological sample mounting

SINGLE-OBJECTIVE LIGHT SHEET

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Featured Products & Services



Multi-Immersion Objectives

Applied Scientific Instrumentation Inc.

ASI and Special Optics have developed two dipping objective lenses designed for light sheet microscopy of cleared tissue samples, including ASI's ct-dSPIM. These objectives work in any refractive index media without a correction collar because of a unique curved first surface.

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LS850 Fully Automated Microscope

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More News

Applications Open for 2025 SPIE Prism Awards

SPIE, the international society for optics and photonics, is accepting applications for its 2025 Prism Awards, which will celebrate its 17th anniversary on January 29 during a gala evening at SPIE Photonics West. The awards, held annually by SPIE, recognize and honor the most innovative products on the market across the wide range of optics and photonics applications. [Read Article](#)

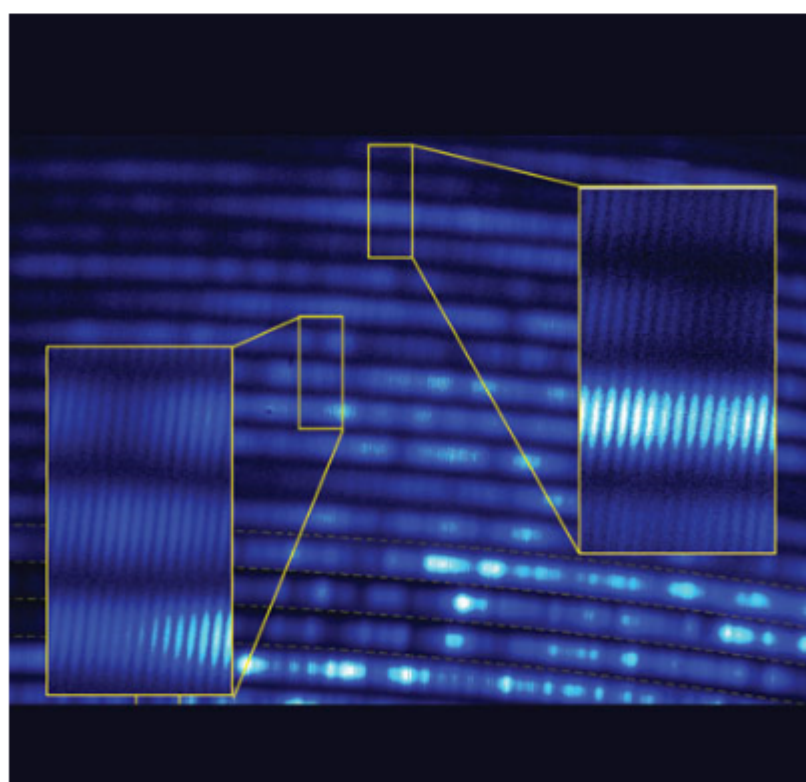
Water-Born Glass Shows Transparent, Adhesive, Self-Healing Properties

Researchers from Tel Aviv University have created a type of glass that is formed spontaneously when a powdered substance comes into contact with water at room temperature. The glass is a strong adhesive, fully transparent, and has self-healing properties. It is expected to have applications in a broad range of industries, from satellite communications to medical fields. [Read Article](#)

Programmable Sensor Provides Fast, High-Quality Imaging of Neural Changes

To study brain functions like memory, neuroscientists track the electrical communications of neurons. These voltage changes can be subtle and happen on a millisecond timescale. A programmable image sensor from MIT could improve the ability to measure these signals, potentially allowing greater insight into how they affect brain function. [Read Article](#)

Latest Webinars



Measuring Starlight with an Ultrafast Laser: Astrocomb Development for the Extremely Large Telescope

Tue, Aug 6, 2024 10:00 AM - 11:00 AM EDT

In this webinar, Yuk Shan Cheng of Heriot-Watt University explores the important role of the Extremely Large Telescope's (ELT) ANDES spectrograph and its need for a high-precision frequency comb system in order to pursue exciting ventures. She focuses on the development of astrocombs, which are laser frequency comb systems that can provide thousands of stable, atomically referenceable, and evenly spaced calibration lines. Despite their demonstrated success in labs and various telescopes worldwide, integrating astrocombs into modern telescope facilities presents challenges, including aligning their mode spacings with the spectrograph's dispersion and achieving broad spectral coverage, particularly in the UV-blue/green wave band. This presentation covers the approaches to these challenges, recent implementation at the Southern African Large Telescope, and advancements in astrocomb technology at Heriot-Watt University, including the development of the first continuous UV-blue/green astrocomb.

[Register Now](#)

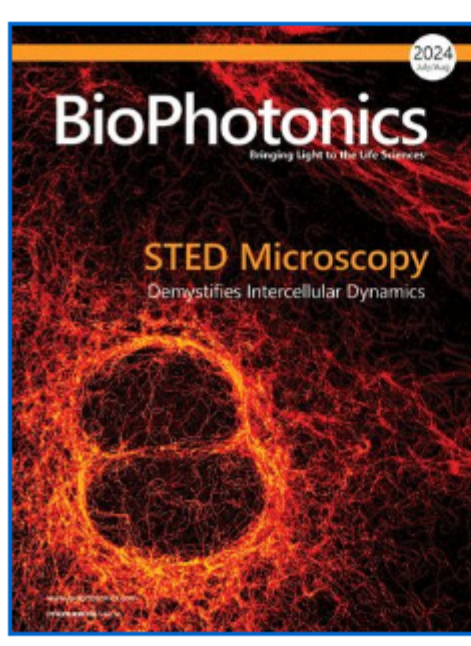
Next Issue:

Features

Tunable Light Sources, Silicon Photonics & Biomedical Applications, Surface-Enhanced Raman Spectroscopy & Diagnostics, and Precision Motion in Biological Applications

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