

BIOPHOTONICS

BRINGING LIGHT TO THE LIFE SCIENCES®

www.BioPhotonics.com

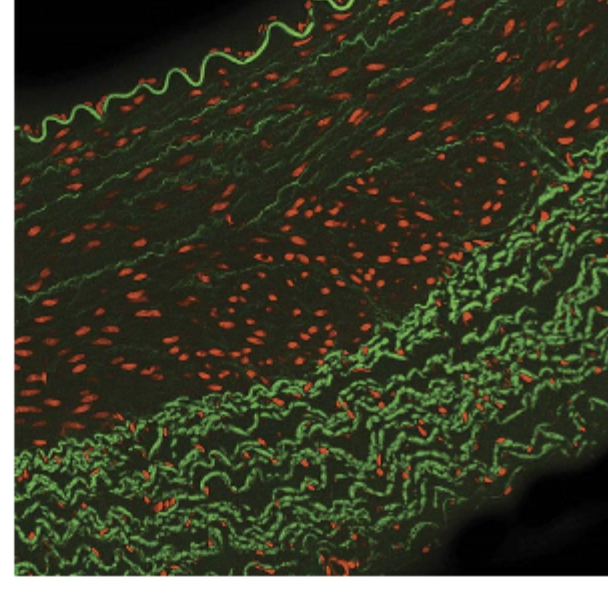
Monthly newsletter focusing on how light-based technologies are being used in the life sciences. Includes news, features and product developments in lasers, imaging, optics, spectroscopy, microscopy, lighting and more. Manage your Photonics Media membership at [Photonics.com/subscribe](https://www.photonics.com/subscribe).



Illumination Advancing Fluorescence Microscopy in Life Sciences, Medical Realms

In many academic research and medical settings, microscopy and imaging have transitioned from using traditional lamp illumination, such as mercury and Xenon lamphouses, to solid-state LED technologies. The benefits of moving to LEDs include long lifetimes and increased stability of the light source, eliminating the need to replace or dispose of toxic bulb waste. Fluorescence microscopy, for its part, has traditionally used and been limited by the spectrum of the mercury arc lamp, which has defined the chemistry of fluorophores, as well as the excitation and emission filters used in fluorescence imaging across the world.

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BioPhotonics Conference Highlights Effective System Design and Application in Research and Medicine

Leading practitioners across the spectrum of innovation in biophotonics technology will spotlight the field's rapidly advancing landscape in the BioPhotonics Conference taking place October 24-26. The online showcase features sessions from technology developers and instrument manufacturers spanning the industry, academia, and research communities.



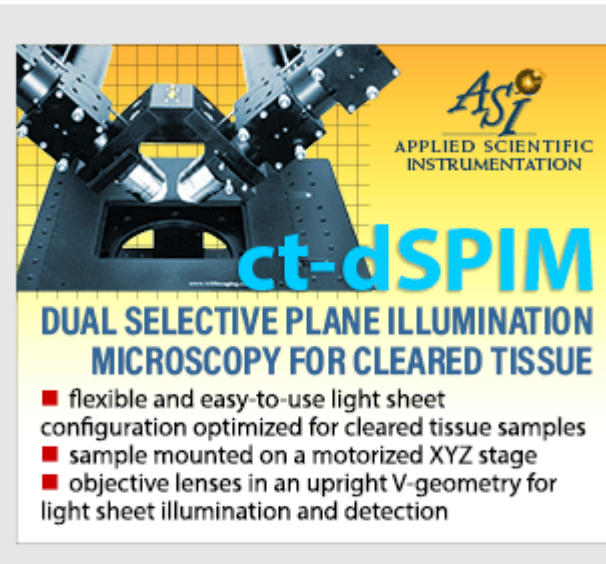
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Build Versus Buy: Considerations in SD-OCT System Design

Many researchers and product developers using spectral-domain optical coherence tomography (SD-OCT) for biomedical research and clinical treatment choose to build their own system. This requires multiple optical and mechanical components, an understanding of signal and image processing, and the optics and programming expertise needed to bring it all together — as well as a significant investment of time to assemble and calibrate the system. Using a prebuilt, off-the-shelf OCT spectrometer as one of the starting components can speed and simplify this process, reduce risk, and improve the quality of images collected.



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.: Featured Products & Services



NAN Open-Design Upright Microscope

Sutter Instrument Company

The Sutter NAN™ — A focusing nosepiece microscope designed for electrophysiology. The microscope frame has been reimagined around highly stable, adjustable manipulator gantry stands. This design allows for many possible configurations to match the ever-expanding applications for upright microscopes.

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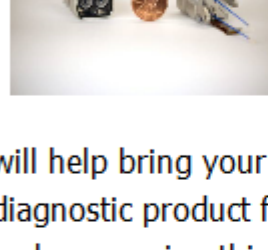
Custom Optical Assemblies

Rocky Mountain Instrument Co. (RMI)

Custom optical assemblies for your life science applications including microscopy, spectroscopy, and biotech imaging. Proven technologies in fast prototyping, design consultation, and vertically integrated manufacturing.

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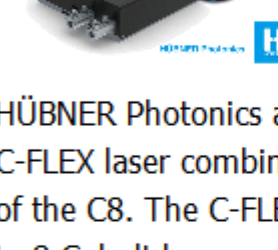
Bring Your Next Product to Market

Optikos Corporation

Optikos engineering services will help bring your next medical device or diagnostic product from design to market. Optics makes amazing things possible in life sciences, and Optikos makes it happen.

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C-FLEX C8: Up to 8 Lasers Combined!

HUBNER Photonics GmbH

HÜBNER Photonics announces an expansion of the C-FLEX laser combiner family with the introduction of the C8. The C-FLEX C8 is designed to integrate up to 8 Cobolt lasers making it ideal for solutions in bioimaging, Raman spectroscopy and holography.

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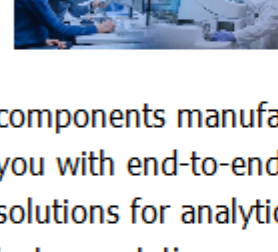
Single-Objective Light Sheet

Applied Scientific Instrumentation Inc.

Based on the OPM and SCAPE technologies and developed in collaboration with Leica Microsystems, microscope enables fast and gentle volumetric imaging of fluorescent biological samples over many time points and multiple channels, all while using conventional sample mounting.

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Providing Custom Optical Solutions

MKS/Newport

Harnessing 75 years of optical components manufacturing excellence, MKS provides you with end-to-end custom sub-assemblies solutions for analytic, life science, and medical instrumentation markets. Specializing in spectral analysis solutions requiring continuous or discrete wavelength discrimination.

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LS850 Fully Automated Microscope

Etaluma Inc.

The LS850 Microscope is the latest generation of our fully automated three-channel flagship model and offers the latest advances in optics, cameras, throughput, and user flexibility delivering image quality, motion speed, illumination, and software flexibility.

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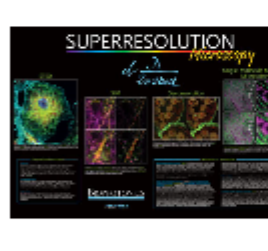
Step Through the Spectrum with Nanopede™ Filters

IDEX Health & Science - Semrock Optical Filters

IDEX Health & Science understands the demands of flow cytometry, and we are proud to announce our latest Semrock optical filters, which cover the near UV and visible spectrum in 20 nm Full-Width, Half-Max (FWHM) steps. Moving into the NIR, the FWHM increases to 30 nm. The twenty-six filters in the Nanopede family have been designed with your application in mind.

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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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KeyLight™ by Phoseon Technology

Phoseon Technology Inc.

KeyLight™ is a compact light source that supports 3-7 channel fluorescence microscopy systems. It brilliantly illuminates your results by delivering intense, broad-spectrum UV and visible wavelengths for a wide variety of colors between 340 nm and 760 nm.

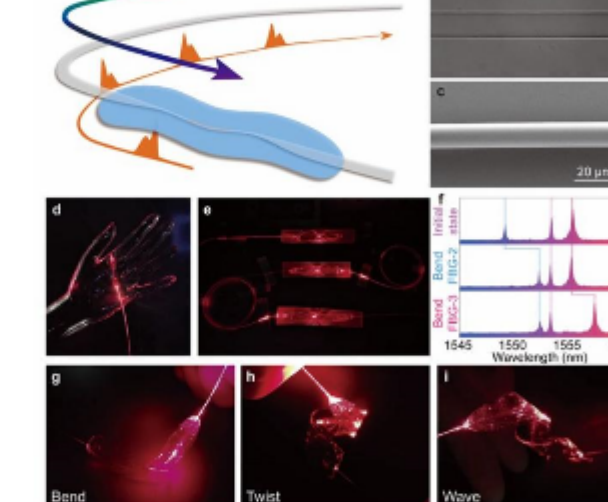
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.: In Case You Missed It

Skin-Like Microfiber Grating Gauges Cardiovascular Wellness

According to the World Health Organization, 17.9 million people die annually due to cardiovascular diseases. Soft wearable devices are well suited for monitoring physiological signals from electrocardiogram, phonocardiogram, and pulse wave. Advantages of these types of devices include real-time operation capability, skin-like mechanical properties, and high signal-to-noise sensing capability.



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Rockley Completes Human Studies of Blood Pressure Monitor

Rockley Photonics has completed two IRB-approved human studies using a first-generation Alpha prototype of their noninvasive laser-based cuffless blood pressure monitor. The device is currently in advanced development.

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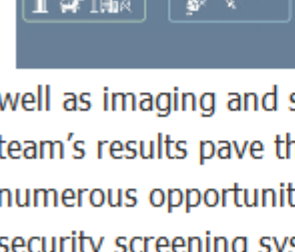
Apollon, MIT to Collaborate on Noninvasive Glucose-Monitoring Technology

Seoul-based medical technology startup Apollon Inc. will collaborate with MIT's Laser Biomedical Research Center (LBRC) to develop and conduct clinical trials of noninvasive continuous glucose monitors (CGMs) using Raman spectroscopy. Though attempts to develop noninvasive CGMs have been ongoing since the early 2000s, none have yet achieved Food and Drug Administration approval.

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.: Upcoming Webinars

< New Frontiers in Terahertz Technology



Wed, Oct 4, 2023 1:00 PM - 2:00 PM EDT

Although unique potentials of terahertz waves for chemical identification, material characterization, biological sensing, and medical imaging have been recognized for quite a while, the relatively poor performance, higher costs, and bulky nature of current terahertz systems continue to impede their deployment in field settings. In this presentation, Professor Mona Jarrahi describes some of her team's recent results developing fundamentally new terahertz electronic and optoelectronic systems as well as imaging and spectrometry architectures to mitigate the performance limitations of existing terahertz systems. Her team's results pave the way for compact and low-cost terahertz sources, detectors, and spectrometers that could offer numerous opportunities such as, medical imaging and diagnostics, atmospheric sensing, pharmaceutical quality control, and security screening systems.

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.: Next Issue:

Features

Live Cell Imaging, Light-Sheet Microscopy, Fluorescence Imaging, and Lasers and Multiphoton 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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