

BIOPHOTONICS

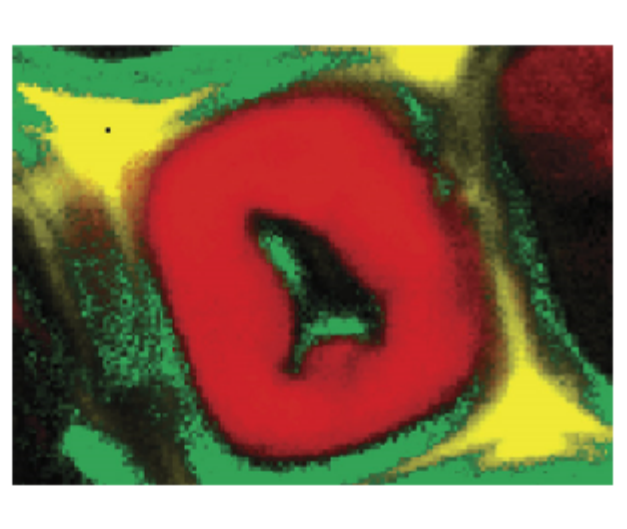
BRINGING LIGHT TO THE LIFE SCIENCES®

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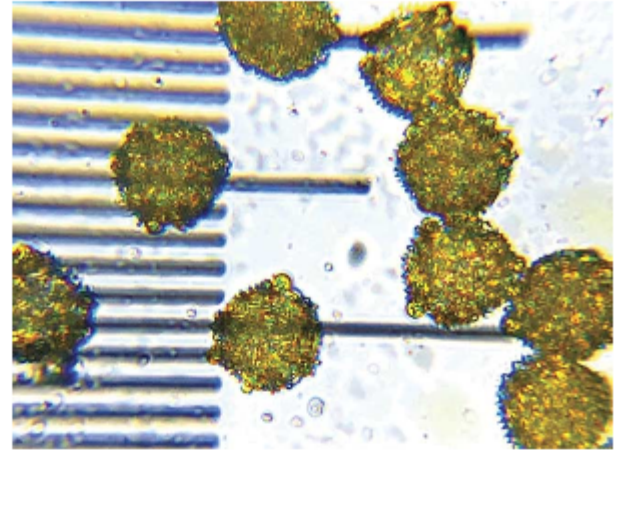
NEWest ZIVA laser light engine
 seven bright lasers, one simple box
 100mW/ color from a 100µm diameter fiber
 and more, OEM customization available

Raman Imaging Opens View to Diagnosis and Discovery
 By revealing the chemical composition of samples, Raman microscopy has proved to be useful in many fields, including medical diagnosis, materials science, cosmetics, and food science. It is a nondestructive method and requires no staining or other specialized sample preparation.



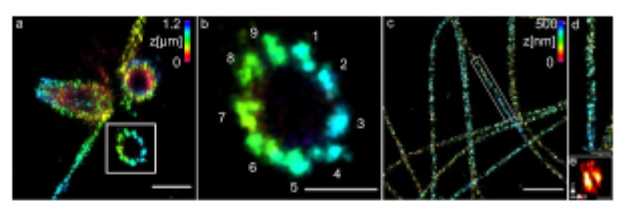
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Portable Microscopy Leverages Advancements in Electronics and Computing
 Conventional bright-field microscopy is not the only modality becoming increasingly available thanks to miniaturization: Techniques such as dark-field and holographic imaging, which provide detailed structural information in a label-free manner, are also making inroads — into the palms of users' hands.



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Microscopy Methods Combined to Achieve Molecular Resolution
 An international team of researchers has combined superresolution microscopy method dSTORM with expansion microscopy to overcome a previous limitation of superresolution microscopy.



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.: Featured Products

Ultra Precise Piezo-Z Focus Stage
Applied Scientific Instrumentation Inc.
 The stage is capable of XY resolutions down to the 10-20 nm and Z resolutions to the 1nm range. It is able for use with rapid z-sectioning and autofocus systems. It prevents focus drift when used with our CRISP system.

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Alluxa Ultra Series Filters and Coatings
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 Alluxa Ultra Series Filters, including Narrowband, Dichroic, UV, IR, and Notch filters, provide the highest performance optical thin film solutions available today. For example, the Ultra Series Flat Top Narrowband filters offer the narrowest bandwidths and squarest filter profiles in the industry.

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Keylight™ OEM Light Source
Phoseon Technology Inc.
 KeyLight™ illumination sources for fluorescence microscopy is the perfect solution to integrate into your equipment. Phoseon's proprietary LED KeyLight™ illumination sources deliver the highest performance imaging with easy integration for OEMs.

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ZIVA Light Engine
Lumencor Inc.
 Lumencor's ZIVA light engine® with seven lasers and high end electronics delivers bright, stable, robust illumination. Narrow bore fibers ($\leq 200 \mu\text{m}$) generate ultra high radiance from a compact, pre-aligned, bench top device. Super resolution microscopy techniques are well supported. OEM customization available.

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CoolLED Ltd.
 Discover more with the new CoolLED pE-800 LED Illumination System for fluorescence microscopy. Featuring eight individually controllable LEDs and lightning fast <math>< 7 \mu\text{s}</math> TTL switching, the pE-800 delivers the highest quality data at minimum cost.

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Computational Photonics with Microsoft® Excel®
Photonics Media
 This book shows how Excel — readily available on almost every computer — can be used to study photonics problems and to design, analyze, and optimize photonics applications. Excel comes with all the necessary ingredients:

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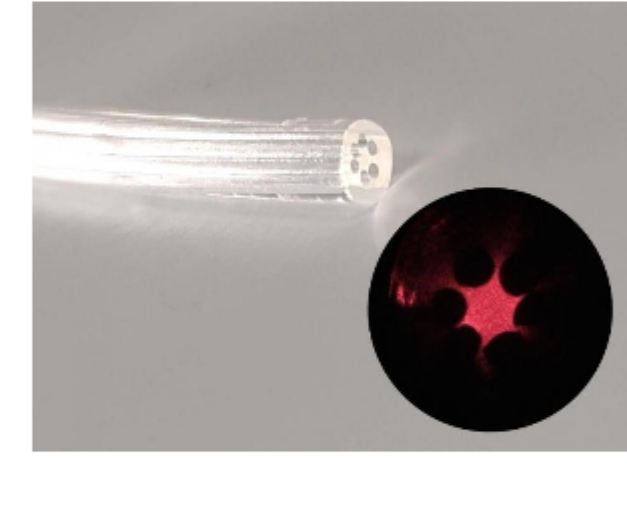
KeyLight™ Source for Fluorescence Microscopy

The Ultra Precise Piezo-Z Stage
 Perfect for super resolution microscopy applications.

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.: In Case You Missed It

Marine Algae Optical Fiber Boasts Applications in Range of Medical and Scientific Environments
 Researchers at the University of Campinas in Brazil and Gunma University in Japan have designed an optical fiber from agar, the natural gelatin obtained from marine algae. In addition to being edible, the fiber is biodegradable and biocompatible — qualities that give the researchers the ability to use its waveguide for in vivo applications such as imaging, light delivery, and sensing.



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Flexible Parylene Waveguide Operates over Broad Spectrum
 A parylene-based waveguide has the physical characteristics necessary to enable it to emerge as the new standard in optical biointerfaces. Researchers at Carnegie Mellon University developed the highly flexible waveguide, which can additionally operate over a broad spectrum of light. The device answers demand for miniaturized, flexible optical tools for reliable ambulatory and on-demand imaging in the body.

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CHIDO Offers Insight into Cells, Molecules
 Researchers at the University of Rochester and the Fresnel Institute in France developed a method for visualizing molecules' position and orientation in 3D, as well as their oscillations. The technique could allow for greater insights into the biological processes involved when a cell and the proteins that regulate its functions react to a COVID-19 virus.

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Optical and Electrical Microsystems for Advanced Biomedical Imaging and Diagnosis
 Thu, Nov 12, 2020 10:00 AM - 11:00 AM EST
 Medical diagnosis heavily depends on innovative methods for biomedical imaging. New system concepts that combine miniaturized optical MEMS components, like scanning mirrors and spatial light modulators, with new methods of realization of passive micro-optics allow for a variety of different new biomedical products. This webinar with Michael Scholles, Ph.D., Head of the Fraunhofer Project Hub MEOS will describe the technical realization of those systems in more detail, as well as their biomedical applications.

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