

BIOPHOTONICS

BRINGING LIGHT TO THE LIFE SCIENCES®

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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.

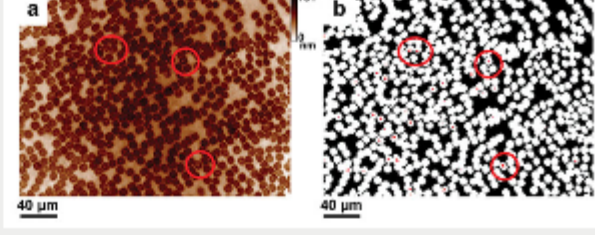
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4-Color Multi-Laser Engine
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Quantitative Phase Imaging Advances Disease Detection

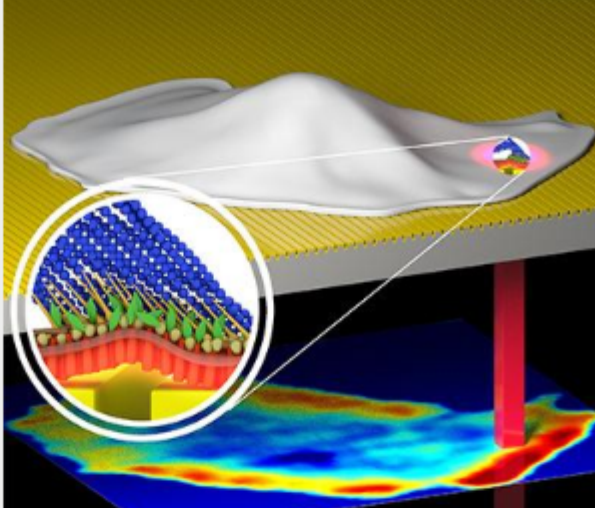
A combination of quantitative phase imaging and Raman microspectroscopy techniques is paving the way toward quick, automated, label-free detection of acute infectious diseases such as malaria. Treating patients with malaria involves the determination of three parameters: parasite species, parasitemia (the rate of infected blood cells), and development stage. Microscopy remains the mainstay of malaria diagnosis in most large health clinics and hospitals.



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Label-Free Microscopy Analyzes Dynamics of Cell Membranes

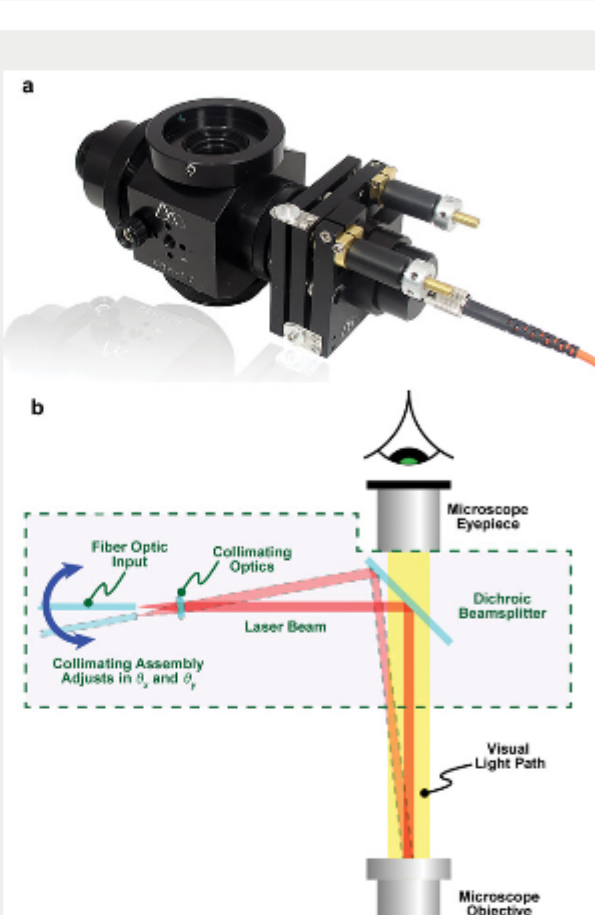
A new live-cell imaging technique will enable researchers to observe the formation and growth of cell membrane focal adhesions. Examining focal adhesions — cell membrane components that regulate adhesion and migration — is one of the keys to understanding how a cell proliferates, differentiates, and migrates.



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Optimizing Probe Positioning for Life Science Research

Photonics technologies enable life scientists to probe samples in the increasingly sophisticated study of processes ranging from neuron signaling to heart muscle contraction, as well as cells and cellular development. As research continues at increasingly finer levels of resolution, the requirements for optomechanical positioning become ever more demanding. Positioning equipment manipulates the probes used to interact with biological samples. This includes positioning a light probe, such as a focused laser or LED, and positioning a physical probe, such as an electrode or microsyringe.



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Featured Products



[LIAD Lock-in Amplifier Detectors](#)

Newport Corporation
Ideal for calibrated power measurement of very-low level light sources, the LIAD detectors are used in conjunction with chopped (at 18Hz) CW or quasi CW radiation. Wavelengths range from 0.15 to 12 μm, power measurement down to 300 fW, and capable of a pulsed source with a 200 Hz or higher frequency.

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[Powerful Femtosecond Fiber Lasers](#)

TOPTICA Photonics Inc.
The FemtoFiber ultra series are compact lasers that work reliably after a push-button start. No water-cooling is required since simple air-cooling is sufficient for stable operation. These cost-effective and compact laser solutions provide femtosecond pulses with high average power and excellent beam quality.

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[Polisher for Optical Medical Devices](#)

KrellTech
NOVA™ is multi-configurable, supporting a variety of biophotonic polishing applications from connectors to endoscopes, OCT bare fibers to image bundles, as well as custom components. NOVA™ is scalable for R&D projects, high volume production, and field maintenance.

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[pT-100 for Optimised Transmitted Light](#)

CoolLED Ltd.
Utilising the highly successful pE-100wht technology, we have further developed our LED solutions for Transmitted Light Applications. The pT-100 launches in December 2018 and will be available in 4 variants: 1. BROAD WHITE OUTPUT - pT-100-WHT (formerly known as pE-100wht)

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[It Just Keeps Getting Better....](#)

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- Breadth: UV + visible + nIR light: 350–760 nm
- Brightness: ~ 4.0 W optical output
- Control: Light on/off and graduated intensities
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[Optical Biomedical Imaging](#)

Photonics Media
At last, a reference work has been compiled that offers in one place a broad survey of technologies, applications and markets for optical biomedical imaging, as only Photonics Media could produce it.

This collection is a practical resource for those engaged in the research and development of relevant technologies.

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[Tunable Lens Focus Device](#)

Applied Scientific Instrumentation Inc.
Our Tunable Lens system consists of the C60-TUNELENS- 4F

assembly along with the TGTLIC rod of the TG1000 controller. The system lets user remotely control the focus of the system without moving the objective. C-Mounts are used to mount the C60 Tunable 4F assembly to the imaging camera and to the microscope's photo port.

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[Alluxa Ultra Series Filters and Coatings](#)

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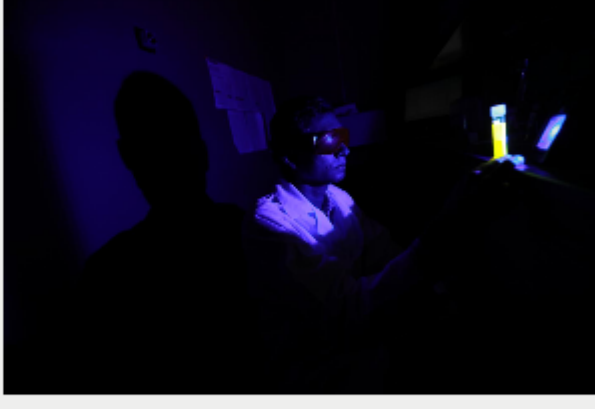
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In Case You Missed It

Blue Light Excites Retinal, Intercepts Cellular Signaling in the Eye

An optical chemistry research study has shown how blue light from digital devices and the sun can cause the death of retinal molecules, increasing potential for age-related macular degeneration.



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The Nobel Prize in Physics 2018 — Tools Made of Light

Three scientists, from the United States, France, and Canada, have been awarded the Nobel Prize in physics for advances in the field of laser physics.

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OCT Tool Explores How Sound Moves Through the Ear

A vibrational imaging tool based on optical coherence tomography (OCT) is providing new insight into how the ear receives and processes sound waves.

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