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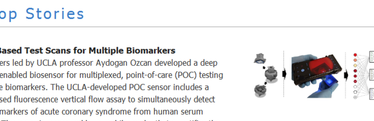
Thursday, May 18, 2023

This Week in PHOTONICS

PHOTONICS MEDIA photonics.com




## .: Top Stories

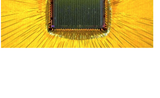
**Paper-Based Test Scans for Multiple Biomarkers**
Researchers led by UCLA professor Aydogan Ozcan developed a deep learning-enabled biosensor for multiplexed, point-of-care (POC) testing of disease biomarkers. The UCLA-developed POC sensor includes a paper-based fluorescence vertical flow assay to simultaneously detect three biomarkers of acute coronary syndrome from human serum samples. The assay is processed by a mobile reader that quantifies the target biomarkers through trained neural networks.

Read Article



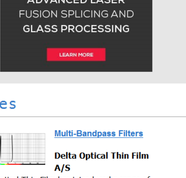

**FPGA-Based Data Compression Drives Brain Imaging Performance Gains**
To help broaden the use of single-photon avalanche diode cameras for multispeckle diffuse correlation spectroscopy, researchers at the University of Edinburgh developed a data compression scheme for a large-pixel-count SPAD camera using a field-programmable gate array. The camera system's large sensor array enabled a substantial signal-to-noise ratio gain over a single-pixel system. The researchers demonstrated an SNR gain of 110, with respect to single-pixel multispeckle DCS, using half of the 192 × 128 SPAD array.

Read Article



**Argonne Quantum Foundry to Support Scalable Tech, Future Workforce**
Argonne National Laboratory opened its Quantum Foundry, part of the U.S. Department of Energy's (DOE) drive to accelerate advancements in quantum information science. The Argonne Quantum Foundry is part of Q-NEXT, one of five DOE Office of Science National Quantum Information Science Research Centers.

Read Article


## .: Featured Products & Services

**671 Series Laser Wavelength Meter**

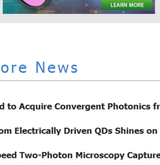
**Bristol Instruments Inc.**
The 671 Series Laser Wavelength Meter uses a proven Michelson interferometer-based design to measure the wavelengths of CW lasers to an accuracy as high as ±0.2 parts per million. Operation is available from 375 nm to 12 µm. Continuous calibration with a built-in wavelength standard guarantees the reliable accuracy that is required for the most meaningful experimental results.

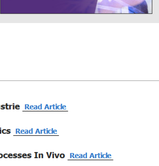
Visit Website | Request Info

**Multi-Bandpass Filters**

**Delta Optical Thin Film A/S**
Delta Optical Thin Film has introduced a range of Multi-Bandpass Filters that transmit two or more distinct wavelength bands while blocking others. These filters are well suited for multi-purpose point-of-care instruments using multiple excitation and/or multiple emission wavelengths.

Visit Website | Request Info




## .: More News

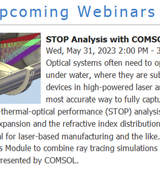
**Lumibird to Acquire Convergent Photonics from Prima Industrie** Read Article

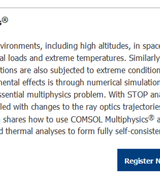
**Light from Electrically Driven QDs Shines on Silicon Photonics** Read Article

**High-Speed Two-Photon Microscopy Captures Rapid Bio Processes In Vivo** Read Article

**Materials Approach Streamlines Microelectronics Thermal Regulation** Read Article

**Sparrow Quantum Nets $4M in Seed Round** Read Article

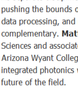



## .: Upcoming Webinars

**STOP Analysis with COMSOL Multiphysics®**
Wed, May 31, 2023 2:00 PM - 3:00 PM EDT
Optical systems often need to operate in harsh environments, including high altitudes, in space, and under water, where they are subjected to structural loads and extreme temperatures. Similarly, optical devices in high-powered laser and nuclear applications are also subjected to extreme conditions. The most accurate way to fully capture these environmental effects is through numerical simulation using structural-thermal-optical performance (STOP) analysis. This is a quintessential multiphysics problem. With STOP analysis, thermal expansion and the refractive index distribution can be fully coupled with changes to the ray optics trajectories, which is essential for laser-based manufacturing and the like. This presentation shares how to use COMSOL Multiphysics® and the Ray Optics Module to combine ray tracing simulations with structural and thermal analyses to form fully self-consistent STOP models. Presented by COMSOL.

Register Now



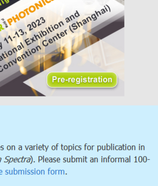
**Photonic Crystal Fibers: Three Decades of Novel Science**
Thu, Jun 1, 2023 10:00 AM - 11:00 AM EDT
Since they first appeared in the 1990s, photonic crystal fibers (PCFs), which are thin strands of glass with an intricate array of hollow channels running along their length, have ushered in a new era of linear and nonlinear fiber optics. As well as permitting unprecedented control over dispersion and birefringence, PCFs offer guidance in both solid glass and hollow cores. Curiosity-driven research into the light-matter interactions in PCF has inspired many potential applications. After a brief introduction, Philip Russell of the Max-Planck Institute for the Science of Light shares several recent developments in the field of PCFs.

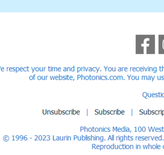
Register Now

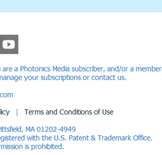
## .: All Things Photonics

As separate disciplines, quantum science and integrated photonics are pushing the bounds of possibility in communication science, compute, data processing, and more. In tandem, the two realms are highly complementary. **Matt Eichenfield**, the SPIE Endowed Chair in Optical Sciences and associate professor of optical sciences at the University of Arizona Wyant College of Optical Sciences, spotlights quantum integrated photonics with a focus on applications and a look into the future of the field.

Listen Now



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