

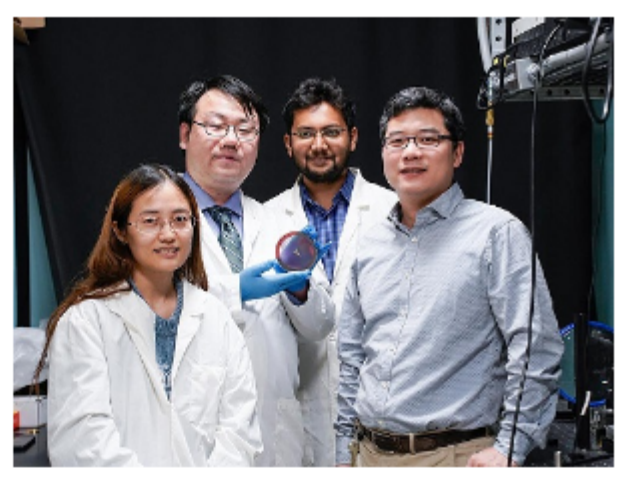
This Week in PHOTONICS



Optimizing Photonics & Optical Device Manufacturing. **Precisely.**

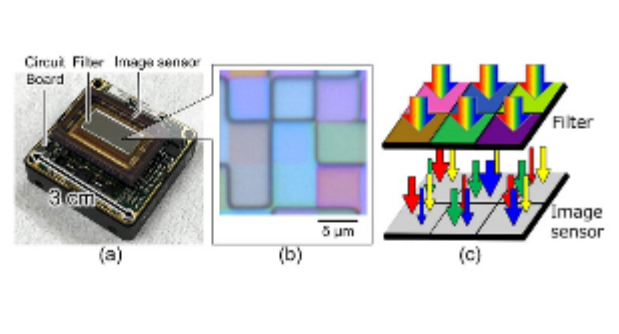
:: Top Stories

Large-Aperture Metalens Images Lunar Surface
 Researchers at Penn State have developed a metalens that is large enough to be put into a telescope, and used the optic to image the moon's surface. The metalens, which the researchers used to create a metalens telescope instrument, works in the near-infrared range with nearly diffraction-limited focal spot sizes and a high peak focusing efficiency of 80.84% at 1450 nm experimentally.



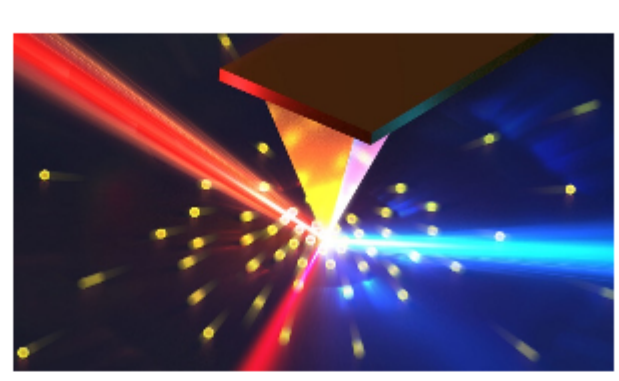
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Panasonic Boosts Hyperspectral Sensitivity with Compressed Sensing
 Researchers from Panasonic have developed hyperspectral imaging technology by applying compressed sensing — a method that enables differentiation of slight color differences and enables the improvement of image analysis and recognition accuracy. With the development, the company has achieved what it said is the world's highest sensitivity in hyperspectral imaging technology.



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Method Achieves Nanoscopic Measure of Electron Dynamics in Semiconductor Materials
 With the continued miniaturization of electronic and photonic devices, tools to examine the behavior of free electrons, simultaneously at the picosecond-time and nanometer-length scales, have become necessary. Now, A method developed by researchers at the University of California, Berkeley is poised to allow more effective measurement of these electrons, opening paths to better energy efficiency. The researchers developed what they described as a new type of optical nanoscopy to measure electron dynamics in semiconductors.



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:: Featured Products & Services

Intelligent Laser Systems (ILS Series)

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 Exail's (formerly iXblue) new generation of agile and Intelligent Laser Systems (ILS Series) offers a precise control of the laser amplitude, phase, and absolute frequency with fast tunability. They are turnkey frequency-stabilized laser systems for Quantum Technologies and laser-cooled atoms.

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Aerotech Inc.
 The FiberMaxHP is a second-generation three- to six-axis photonics alignment platform built on Aerotech's ANT nanopositioning product line. It is designed to meet the demanding needs of critical photonics alignment in a highly automated, 24/7 production environment with no compromise in speed, accuracy, and resolution.

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:: Upcoming Webinars

- Understanding the Modulation Transfer Function and Beginning the Lens Selection Process**
 Tue, Mar 21, 2023 1:00 PM - 2:00 PM EDT
 Stuart Singer of Schneider Optics, Inc. discusses how to understand the modulation transfer function (MTF) with respect to lens performance, while avoiding complex math such as fast Fourier transforms. The MTF is often the most important aspect of a lens because it shows how well a lens is able to reproduce the object within its view. Singer shares the steps that are needed to begin selecting a proper lens that meets specific imaging and system requirements. Finally, he details which lenses are appropriate for various imaging systems. Sponsored by Optikos Corporation and Navitar Inc.

[Register Now](#)
- AI for Vision-Guided Robotics**
 Tue, Apr 4, 2023 1:00 PM - 2:00 PM EDT
 David Bruce of FANUC America Corp. discusses how the latest advancements in AI are helping to extend the capabilities of vision-guided robots for many different industries, including automotive, logistics, food, and pharmaceutical. Bruce shares a basic understanding of D-CNNs and examples from different industries that highlight how AI either improved a process or enabled it.

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:: All Things Photonics

Rohit Bhargava, director of the Cancer Center at Illinois, follows his Photonics West 2023 Optical Biopsy Conference keynote with a discussion on increased utility in infrared spectroscopic imaging. Discussion points include the advent of the quantum cascade laser, the role of artificial intelligence and machine learning for optimized workflows, and optimizations in instrumentation leading to improved outcomes in clinical settings.



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