

Monthly newsletter from the editors of Photonics Spectra, with features, popular topics, new products, and what's coming in the next issue. Manage your Photonics Media membership at [Photonics.com/subscribe](https://www.photonics.com/subscribe).

READ APP NOTE

LAMBDA 1050+ UV/VIS/NIR SPECTROMETER

Measure the Band-Gap Energy Value of TiO2 in Powder Form

Ultrafast Lasers Excite Advancements in Multiphoton Imaging

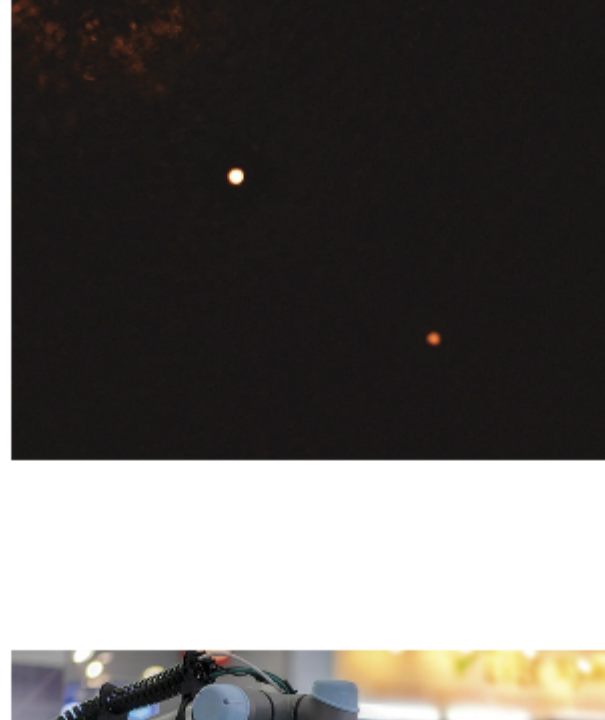
Multiphoton microscopy can image deeper into tissue than traditional confocal microscopy, making it ideal for a range of life science studies. The technique is crucial for brain-related research because it allows imaging of large numbers of neurons or individual synapses and can also be performed in live animals. Today, most multiphoton imaging research employs two-photon techniques in which fluorescent dyes that emit light upon excitation are used.



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A New Wavefront of Adaptive Optics Promises Improvements

Adaptive optics (AO) technology enables Earth-based telescopes to take the twinkle out of the stars. The technology also helps in detecting and reversing eye disease, it improves the throughput of laser-driven manufacturing, and it has enabled the world's most powerful lasers to achieve peak power. AO achieves these improvements by removing distortions endemic to optical wavefronts, thereby ensuring the clearest possible imaging, the highest laser power, and maximum manufacturing efficiency.



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Novel CMOS Technology Reboots Vision-Guided Robotics

A vision-guided robot system can be defined as a robot equipped with one or multiple vision sensors that effectively give the machine a sense of sight. While "blind" robots may suffice for certain simple applications, they quickly reach their limits when confronting variable tasks or environments. Vision-guided robotics enables the automation of much more complex and sophisticated tasks, including the recognition, processing, and handling of objects based on data obtained from a 3D vision system.



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.: Featured Products



Z-Trak2 3D Profile Sensors

Teledyne DALSA, Machine Vision OEM Components

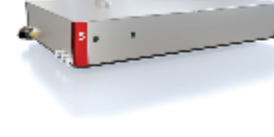
The Z-Trak2™ family ushers in a new era of 3D profile

sensors for high-speed 3D applications. These models deliver scan speeds of up to 45 kHz

combined with a suite of powerful features needed for in-line real-time height measurements.

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White Dwarf OPCPA 5 W

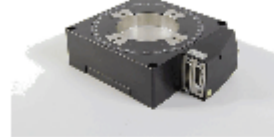
Class 5 Photonics

Compact laser system

specially designed for multiphoton microscopy at high performance parameters. Highest average power laser for 3-photon microscopy. Dispersion compensation included. Robust design. One-box solution. Excellent service.

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RGA150 Motorized Rotation Stage

MKS/Newport

The RGA150 low-profile and large aperture rotary stage addresses the need for quick angle adjustments of wafers and vacuum chucks. Although specifically tailored to semiconductor applications, the RGA150 can also be utilized in other industrial applications, such as through hole imaging/inspection...

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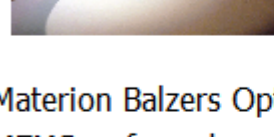
Vibration Isolation Workstation

Kinetic Systems Inc.

Designed to isolate sensitive instruments and experiments up to 1300 lbs., the 9100 can be customized by adding a variety of work surfaces and accessories. Providing both vertical and horizontal isolation and supported by a VibraDamped steel frame with an Active-Air suspension...

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Microelectromechanical Systems

Materion Precision Coatings

Materion Balzers Optics has coating techniques for MEMS wafers, depositing a wide range of UV, optical, and visible coatings patterned by photolithography. Our 200-mm wafer fabrication can provide many of the operations required for fabrication on glass or silicon.

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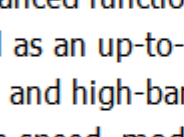
SmartStage™ XY

Dover Motion

With a SmartStage™ XY positioner, the high-performance controller and all hardware to position the stage are built-in. By embedding what used to be multiple cables and external electronics, the control is seamless, and performance-optimized for low noise.

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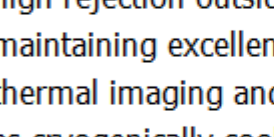
1938-R/2938-R Optical Power Meters

MKS/Newport

The all new 1938-R and 2938-R power meters inherited most of the advanced functions available in the x936-R series, as well as an up-to-date CPU, touch screen, Android OS, and high-bandwidth electronics design. Ideal for high speed, modulated light measurements, these new power meters are powerful, fast, and versatile.

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IR Filters for Thermal Imaging and Gas Detection

Spectrogon US

Spectrogon manufactures infrared filters and windows with high transmission, high rejection outside the passband, while maintaining excellent coating uniformity — for thermal imaging and gas detection applications such as cryogenically cooled IR detectors and for uncooled microbolometers.

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Automated Glass Components Processing

NYFORS Teknologi AB

The NYFORS SMARTSPLICER is a CO2 laser glass-processing system designed for the production of high-power and sensitive photonic components.

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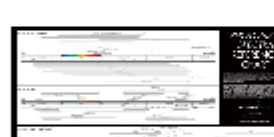


Norland Optical Splice

Norland's optical splice provides a high-performance connection for optic fibers in a unique one-piece design.

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Photonics Spectra Reference Chart

Photonics Media

This full-color, 30 x 20.5-inch poster of the photonics spectrum displays the major commercial laser lines, detectors and optical materials in the ultraviolet to the far-infrared and beyond. The chart was updated in 2021 to reflect the changing technologies in the photonics industry.

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Spotlight 400 FT-IR Imaging System

PerkinElmer

Spotlight™ IR microscope systems are designed to meet the challenges of an expanding laboratory by generating high-quality, reproducible data from a variety of sample types. The Spotlight 400 FT-IR Imaging System combines high sensitivity and rapid imaging with ease-of-use.

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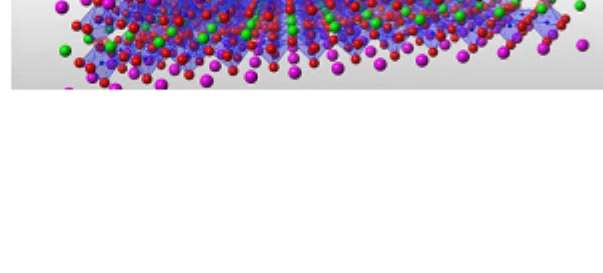
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www.photonicsmarketplace.com

.: In Case You Missed It

UV Light Reveals Opportunities for Rechargeable Battery, Fuel Cell Design

Researchers from the University of Tsukuba and collaborators have shown that UV light can modulate oxide ion transport in a perovskite crystal at room temperature. The discovery opens new avenues in perovskite research for rechargeable batteries and fuel cells, which could help increase environmental sustainability for the automotive industry.



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Topological Approach Boosts Efficiency of On-Chip Frequency Combs

Using a topological platform — topology is a field of abstract math that underlies some of the most peculiar behaviors of modern materials — researchers at the University of Maryland have proposed a method to make chip-sized frequency combs 10x more efficient.

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Single-Spin Color Centers in SiC Cue Up Potential for Quantum Storage Advances

A group at the University of Science and Technology of China (USTC) of the Chinese Academy of Sciences achieved the high-contrast readout and coherent manipulation of a single silicon carbide divacancy color center electron spin at room temperature. The researchers said their advancement marks a breakthrough that had not been previously achieved.

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.: Upcoming Webinars



Si/SiN-Integrated Photonics for Lidar, Quantum, and Sensing

Wed, Nov 17, 2021 10:00 AM - 11:00 AM EST

In this webinar, Amin Abbasi, business development manager at imec, presents imec's recent collaborative progress on using integrated photonics for emerging applications such as on-chip lidar, quantum computing, and sensing. The added value of using integrated photonics-based solutions is a higher level of integration capacity, compactness, and scalability. Presented by imec.

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Novel Solutions for XR Optical Testing: Displays, Waveguides, Near-IR, and Beyond

Thu, Nov 18, 2021 1:00 PM - 2:00 PM EST

The visual experiences provided by XR headsets can be impacted by component performance and defects at any stage of optical design and manufacturing, from display to final assembly. Photometric measurement systems have been proven for XR optical testing with unique configurations of imager, lens, and software--offering different benefits to address each inspection need. In this webinar, learn about considerations for choosing the optimal measurement equipment for each production stage to ensure accuracy and high-quality visual experiences. Presented by Radient Vision Systems.

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Optical Fused Silica Large-Core Fibers: The Influence of Design and Material on Fiber Performance

Wed, Dec 8, 2021 1:00 PM - 2:00 PM EST

Optical fibers are used in a wide variety of applications, including biomedical procedures, industrial laser cutting and welding, and spectroscopy. Fused silica is often the material of choice. Nevertheless, there are several variations of fused silica that can influence fiber performance. Additional factors--such as numerical aperture or cladding-to-core ratio--have an impact. In this webinar, learn how different design parameters and materials influence performance and how to perfect the fiber design for specific applications. Presented by Heraeus Conamic (Heraeus Quarzglas GmbH & Co. KG).

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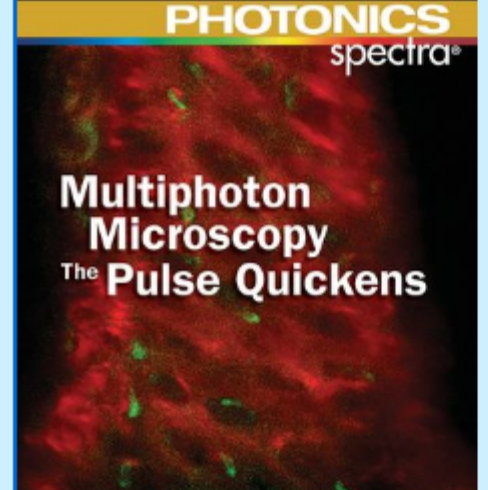
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Features

MicroLED Displays, UV Lasers, Skills Gap in Integrated Photonics, Photonics West Preview, and more.

Photonics Media is currently seeking technical feature articles on a variety of topics for publication in our magazine *Photonics Spectra*. Please submit an informal 100-word abstract to Daniel McCarthy, Senior Editor, at Daniel.McCarthy@Photonics.com, or use our online submission form www.photonics.com/submitfeature.aspx.

About Photonics Spectra



Since 1967, *Photonics Spectra* magazine has defined the science and industry of photonics, providing both technical and practical information for every aspect of the global industry and promoting an international dialogue among the engineers, scientists and end users who develop, commercialize and buy photonics products.

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