



Monthly Newsletter

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



Advanced Manufacturing Unlocks the Full Potential of Aspheric Optics

Aspheric lenses and mirrors can enhance the performance of optical systems while reducing their size and weight. Spherical optical surfaces often fail to form an ideal image or bring a laser beam to its best possible focus — a fundamental limitation that arises from the way that spherical surfaces interact with light. High-performance optical systems typically rely on the use of multiple spherical elements to compensate for this property. [Read Article](#)



Surface Analysis Reaps the Benefits of Increasingly Automated Workflows

Engineers and end users deploy optical metrology methods for surface analysis at points up and down the optical design value chain. In many instances, these optical test and measurement protocols represent the most effective approaches to gauge surface parameters — from smoothness or roughness to reflectivity, to hydrophilicity or hydrophobicity. Such qualities are highly consequential not only during the component design and manufacturing stages,

but also throughout system and product rollout. [Read Article](#)



From Circuits to Surfaces:

Semiconductor Innovations Advance Precision Optics Fabrication

What were once distinct industries — optics, rooted in classical precision mechanics, and semiconductors, defined by microelectronic miniaturization — are increasingly overlapping at the cutting edge of innovation. This convergence is not coincidental. Rather, it is the result of shared technical challenges and the cross-pollination of

manufacturing techniques, driven in part by the requirements

of optical components pushing beyond the limits of traditional processing methods. To meet these stringent requirements, manufacturers are increasingly adopting techniques originally established for semiconductor fabrication processes. [Read Article](#)



Featured Products & Services



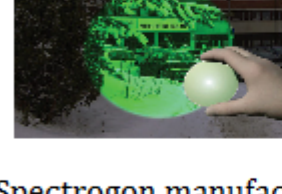
Nanopositioners, Microstages & AFM

Mad City Labs Inc.

Mad City Labs offers a complete product line of high precision piezo nanopositioners, micropositioners, single molecule microscopes, and atomic force microscopes (AFM/NSOM). Applications — photonics, quantum sensing, metrology, microscopy, interferometry, spectroscopy, and astronomy. Unique PicoQ sensors in our nanopositioners yield picometer precision and ultra-low noise performance. Custom solutions for UHV, sensitive environments. New! MMP-UHV50 micropositioner, MadAFM™ sample scanning AFM.

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IR Filters for Thermal Imaging

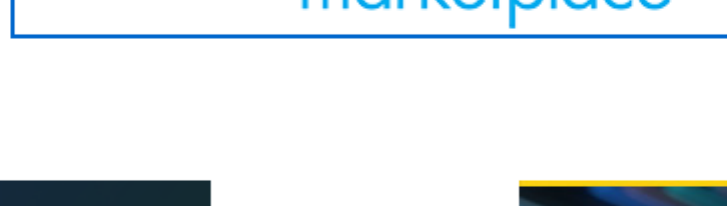
Spectrogon US Inc.

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 uncooled microbolometers. Our filters and windows range in dimension from Ø6.0 to Ø200.0 mm, with dicing capabilities down to as small as 1.0 × 1.0 mm.

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Looking for something else? Check the Photonics Marketplace.



In Case You Missed It

VoxelSensors, Qualcomm Collaborate on Extended Reality Tech

VoxelSensors, a sensing and AI data company, collaborated with Qualcomm Technologies to develop VoxelSensors' sensing technology with Snapdragon® XR Platforms. VoxelSensors developed a single-photon active event sensor 3D sensing, which solves depth sensing performance limitations for robotics and AI. SPAES has 10x power savings and lower latency for performance across varied lighting conditions. [Read Article](#)

Quantinuum, with NVIDIA Backing, Secures \$600M in Honeywell-Led Financing

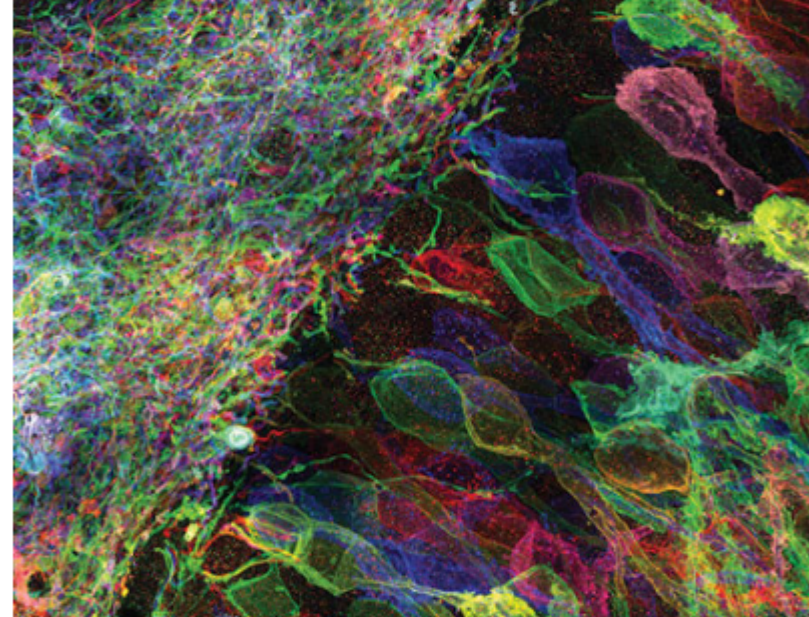
Honeywell has closed an approximately \$600 million equity capital raise for integrated quantum computing company Quantinuum. The round closed at a pre-money equity valuation of \$10 billion. Quanta Computer, NVIDIA venture capital arm NVentures, and QED Investors participated in the round alongside repeat investors JPMorganChase, Mitsui, Amgen, Cambridge Quantum Holdings, Serendipity Capital, and Honeywell. [Read Article](#)

Baumer Acquires X-Sensors AG

Baumer has acquired X-Sensors AG, a producer of high-precision force and strain sensors. Baumer plans to merge the respective development teams from both companies, and that existing sales channels remain in place until further notice. [Read Article](#)



Latest Webinars



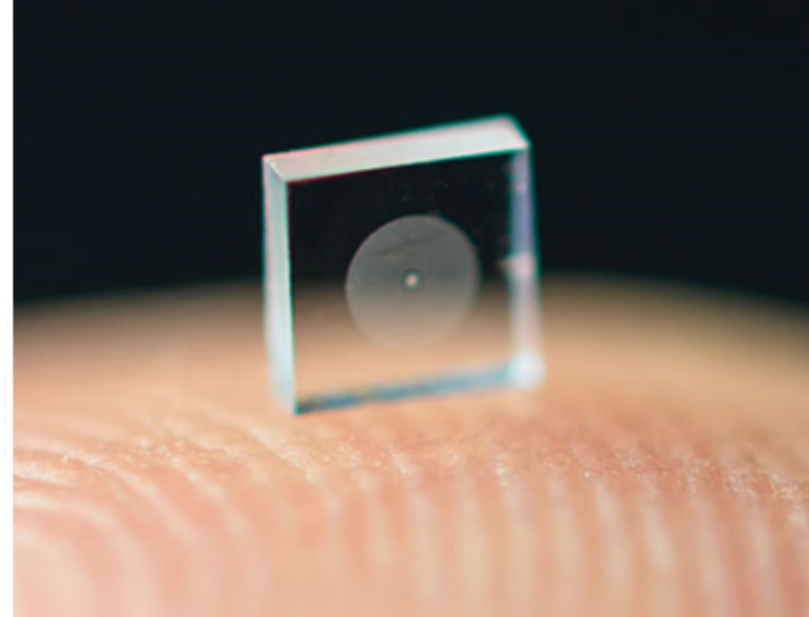
Tools for Analyzing, Controlling, and Simulating Biological Systems

Tue, Sep 16, 2025 1:00 PM - 2:00 PM EDT

It was discovered that one can physically magnify biological specimens by synthesizing dense networks of swellable polymer throughout them, and then chemically processing the specimens to isotropically swell them. This method, which is called expansion microscopy, enables ordinary microscopes to do nanoimaging – important for mapping molecules throughout cells, tissues, and organs. As a second example, Ed's team serendipitously discovered that microbial rhodopsins, genetically expressed in neurons, could enable their electrical activity to be precisely controlled in response to light. These molecules, now called optogenetic tools, enable causal assessment of how neurons contribute to behaviors and pathological states, and are yielding new candidate treatment

strategies for brain diseases. Finally, the development of new strategies such as robotic directed evolution, fluorescent reporters enable the precision measurement of signals such as voltage. To reveal relationships between different molecular signals within a cell, there is work of developing spatial and temporal multiplexing strategies that enable many such signals to be imaged at once in the same living cell. Sponsored by Zaber Technologies Inc., Jenoptik and COMSOL Inc.

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Metasurface Optics for Information Processing and Computing

Thu, Oct 9, 2025 1:00 PM - 2:00 PM EDT

Metasurface optics—ultrathin, nanostructured elements capable of precise light manipulation—are revolutionizing optical information processing. By co-designing optical hardware with computational algorithms, these systems enable complex operations like spatial convolutions directly in the optical domain. This hybrid analog-digital approach offers new possibilities for faster, more efficient imaging and vision systems, while posing exciting challenges at the intersection of photonics, machine learning, and device integration. Sponsored by Moxtek.

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Next Issue:

Features

Precision Optics, Optical Filters, Photonic Microwave and THz Sources

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 Jake Saltzman, Senior Editor, at Jake.Saltzman@Photonics.com, or use our online submission form www.photonics.com/submitfeature.aspx.

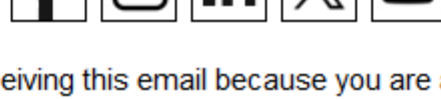
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