

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](http://Photonics.com/subscribe).

**COMSOL Day**  
Optics & Photonics

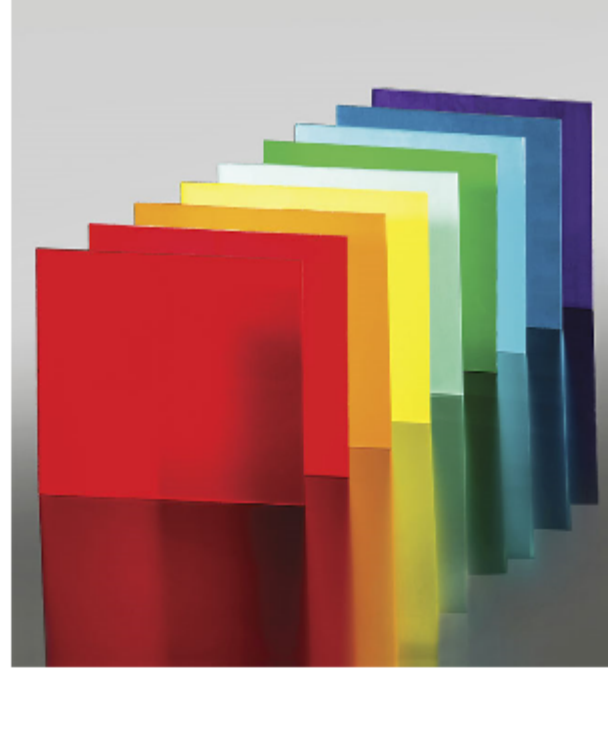
A free, online event where you can attend multiphysics simulation sessions, ask COMSOL staff your questions, and more

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### Selecting Color Filter Glass for Life Science Applications

Optical filters are critical for selectively passing and blocking specific wavelengths in life science applications ranging from monitoring oxygen and pH levels in blood to fluorescence detection, to the polymerase chain reaction tests used to detect COVID-19, to UV sterilization. Color glass filters and coated dielectric filters are both utilized in life science systems. Understanding the advantages and disadvantages of each filter type ensures that system designers can achieve the required performance for their application. When using color glass filters, several key considerations regarding chemical and mechanical properties should also be kept in mind to select the proper solution.

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### Photonics Shapes the Worlds of Augmented and Virtual Reality

Replacing smartphones with smart glasses isn't practical ... yet. In the meantime, advancements in photonics are helping to expand the use of smart glasses in educational, medical, military, and industrial settings. According to technologists and end users, what's needed to sustain and accelerate this growth are brighter light sources, more efficient delivery optics, and better eye-tracking sensors. Also on the wish list are systems with lower weight, more compact form factors, and reduced cost. These requirements apply both to virtual reality headsets that immerse users in a digital world and to augmented reality glasses or displays that superimpose digital data over real-world scenes.

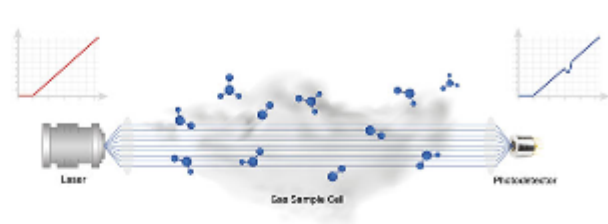
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### Tunable Laser Spectroscopy Achieves New Peaks

The modern world, with the ever-growing impact of technology on humanity and the environment, requires us to thoroughly understand how our civilization works and what it produces — even the invisible matter such as gases that we emit into the atmosphere. There is a growing demand for more sensitive and efficient gas analysis solutions tailored to the challenges of industry and science. Concurrent with this is a constant need for basic research to develop increasingly sensitive detection and analysis devices.

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## .: Featured Products



### Quantify AR/VR True User Experience

**Gamma Scientific**  
High-resolution near-eye display testing leverages a 'Robotic Eye' to emulate how the human eye will perceive AR, VR, MR and head-up displays changes the game for manufacturers. They are empowered with the most comprehensive test suite for automated NED testing and insight into true user experience.

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### Attend COMSOL Day: Optics & Photonics

**COMSOL Inc.**  
Join fellow engineers and simulation specialists at COMSOL Day: Optics &

Photonics on September 16th to learn how multiphysics simulation is used for modeling optical systems during this free, 1-day virtual event. Topics include modeling wave optics and ray optics, simulating quantum- and semiconductor-optical systems, interaction of light with matter on a thermal level, and more. Register here!

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### Compact Laser Vibrometer

**OmniSensing Photonics**  
Built upon the photonics chip and all-in-one packaging technologies, the MV-H series compact laser vibrometer sensor(module) can perform precise noncontact vibration measurement from DC to 2.5 MHz.

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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. It offers contamination free end-capping, splicing, tapering, bundling, and many other glass-shaping processes.

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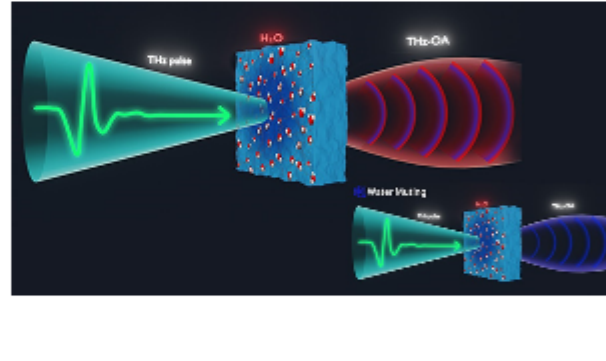
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## .: In Case You Missed It

### Terahertz Optoacoustic Method Images Water-Rich Samples

A research team led by Zhen Tian and Jiao Li at Tianjin University developed a method for analyzing water-rich samples using time-domain terahertz (THz) optoacoustics. The method overcomes a bottleneck that prevented the use of THz radiation in the investigation of biophysical and biochemical processes deep within tissues.

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### Light and Force Reveal Hardening of Materials Under Illumination

Researchers from Nagoya University and the Technical University of Darmstadt developed a method to quantitatively study the effect of light on nanoscale mechanical properties of thin-wafer semiconductors or any other crystalline material. The method, which the researchers characterized as "photoindentation," uses a tiny, pointed probe to indent the material while a light source illuminates the material in a controlled environment, in which the depth and rate at which the probe indents the surface can be measured.

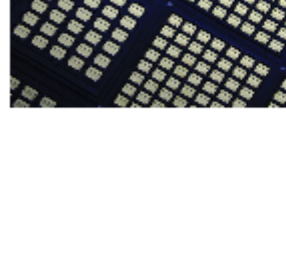
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### Stable Coordination Nanosheets Enable Efficient Light-Energy Conversion

A multi-institutional collaboration has developed coordination nanosheets (CONASHs) that have demonstrated the highest stability under air exposure reported to date, the researchers claimed. The work may find use in optoelectronic applications; CONASHs have generated interest due to their ability to absorb light at multiple wavelength ranges and convert them into electrons with greater efficiency than other types of nanosheets.

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## .: Upcoming Webinars



### AuSn Thin-Film Technology and AuSn Pre-deposited Substrates for Optoelectronics

Wed, Aug 25, 2021 10:00 AM - 11:00 AM EDT  
AuSn thin film is a critical technology to enable an optoelectronic device to ensure durability, anti-oxidation ability and reliability compared with Indium, SnPb, SnBi, and others. In this webinar, Allen Liu of Focuslight Technologies Inc. explains the design, key processes, and application data of high-power laser diode devices. Presented by FocusLight Technologies Inc.

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### Freeform Optics for Imaging: Mid-Spatial Frequency Errors

Thu, Aug 26, 2021 1:00 PM - 2:00 PM EDT  
Residual mid-spatial frequency (MSF) surface errors are common byproducts of the computer-controlled sub-aperture manufacturing techniques needed for fabrication of freeform optics. In this presentation, Thomas Suleski, Ph.D., provides an overview of MSF surface error signatures, specification methods, and performance impacts. Part 3 of the 2021 Freeform Optics Series.

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### Quantum Sensing in Atomic and Solid-State Systems

Thu, Sep 2, 2021 12:00 PM - 1:00 PM EDT  
In this talk, Jennifer Choy, Ph.D., of the University of Wisconsin-Madison describes the realization of quantum sensors in two material platforms: neutral alkali atoms and artificial atoms in diamond. The benefits and challenges of these platforms are illustrated through specific examples, including inertial sensing with cold-atom interferometers and magnetometry with alkali metal vapor and color centers in diamond. Choy also presents the critical developments in optical engineering and material science that are needed to improve device utility and performance in atomic and solid-state quantum sensors. This webinar is the fourth presentation in Hamamatsu's Quantum Technologies Series, presented by Hamamatsu Corporation.

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## .: Next Issue:

### Features

Laser Micromachining, Optical Glass Selection, Spot Cooling, 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](mailto:Daniel.McCarthy@photonics.com), or use our online submission form [www.photonics.com/submitfeature.aspx](http://www.photonics.com/submitfeature.aspx).

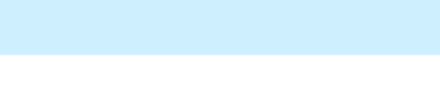
### About Photonics Spectra



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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