



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.

**January 19-22
2021**
Register for free!

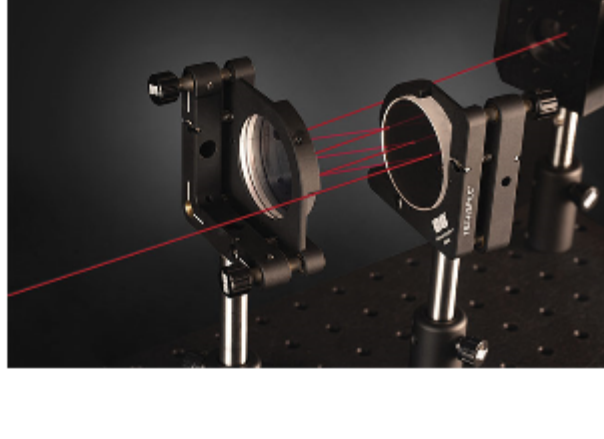
Over 70+ webinar presentations

Lasers • Optics
Spectroscopy • Biomedical Imaging

An Essential Exchange of Ideas Would Benefit the Optics Industry

Highly dispersive mirrors, nanostructured coatings, and freeform optics are the vanguard in optics, and they are well positioned to expand performance and open up new applications. But there's a caveat: Without better cooperation among component makers, systems developers, integrators, and end users, the gaps in knowledge and standards may hamper future growth.

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High-Speed Imaging Capabilities and Applications Expand

Fast and efficient delivery of product into the customer's hands is the endgame in manufacturing. Any defect that occurs as products progress along the manufacturing line may be magnified, which can cause bottlenecks in production or require expensive fixes down the line. When high volumes and yields are added on top of the goal of quality control, problems must be caught quickly and reliably. Such demands help to explain exactly where and why high-speed imaging has become critical to applications across numerous industries, from packaging to logistics to automotive.

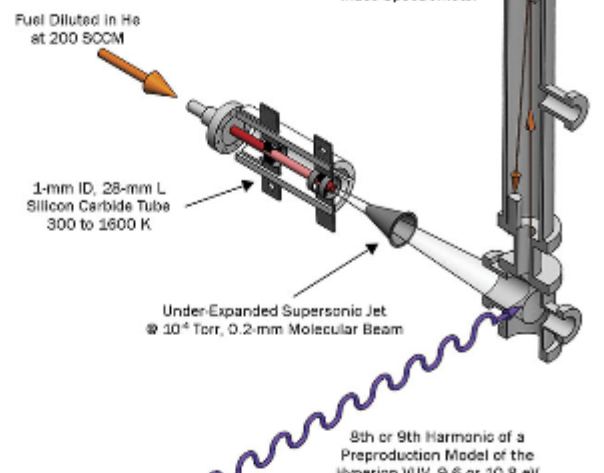
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As Science Advances Lasers, So Lasers Advance Research

Lasers have been used to conduct academic research nearly since their invention in 1960, and these sources of coherent light quickly found diverse, if not precisely directed, applications. Of course, early lasers were not only expensive to build, they also required a team of scientists to operate and maintain them. Recent trends indicate that as lasers have become less costly, more reliable, smaller in size, and easier to use, they've also become increasingly commonplace in the lab, where they can replace and improve upon existing technologies in a variety of disciplines.

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Featured Products



844-PE-USB Power & Energy Meter

MKS/Newport
Ideal for industrial automation and production, the 844-PE-USB Power & Energy Meter utilizes a PC as a powerful virtual power meter control system. When the equipment space is tight or you need to control multiple power meter channels, 844-PE-USB is an ideal solution. It not only has a USB output, but also a 0 - 1 V...

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High Current Laser Diode Drivers

Arroyo Instruments LLC
Arroyo Instruments' new 4400 Series LaserSource laser driver provides the precision, stability, and functionality needed to meet a broad range of laser requirements. With up to 100 Amps, QCW and analog modulation, plus multiple temperature inputs and digital I/O control, the 4400 is an excellent solution to your demanding laser application.

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Alluxa Ultra Series Filters and Coatings

Alluxa
Alluxa Ultra Series Filters, including Narrowband, Dichroic, UV, IR, and Notch filters, provide the highest performance optical thin film solutions available today. For example, the Ultra Series Flat Top Narrowband filters offer the narrowest bandwidths and squarest filter profiles in the industry.

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TracePro Optics and Illumination Software

Lambda Research Corp.
TracePro combines a graphical user interface with solid modeling, Monte Carlo ray tracing, analysis features, CAD import/export, optimization methods, and a complete and robust macro language to solve a wide variety of problems in illumination design and optical analysis.

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Computational Photonics with Microsoft Excel

Photonics Media
This book shows how Excel — readily available on almost every computer — can be used to study photonics problems and to design, analyze, and optimize

photonics applications. Excel comes with all the necessary ingredients: a full range of mathematical functions,...

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P500 Digital Delay Generator

Highland Technology Inc.

The P500's glitch-free timing engine makes four channels of low-jitter, picosecond-precise pulses. The GaN output stages make clean, fast pulses from 0.5 to 25 volts p-p. The trains/frames option changes pulse timings every trigger,...

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In Case You Missed It

Moth Eyes Inspire Antireflective Coating

Researchers at Tokyo University of Science have developed an antireflective coating inspired by the biostructures in moth eyes. Previous attempts at re-creating the antireflective structure, developed through years of evolution, yielded varying degrees of success; despite recent advances in nanoscience that allows the creation of such technology, barriers of scalability and manufacturing costs remain.

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Controlling Ultrastrong Light-Matter Coupling at Room Temperature

The interaction between light and electrons in a system composed of two gold mirrors separated by a small distance and plasmonic gold nanorods produced ultrastrong coupling between light and matter at room temperature. The work stems from an international collaboration of researchers at Chalmers University and in Russia and Poland, as part of a study with broad implications in terms of both future research and potential applications, including light sources, nanomachinery, and quantum technology.

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Habitable Exoplanets to Be Studied with Help of AI and Photonics

Researchers from the University of Sydney developed a sensor capable of correcting the distortion of starlight caused by heat variations in Earth's atmosphere. The sensor would allow ground-based telescopes to study habitable exoplanets.

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Upcoming Webinars

Fourier Transform Infrared Spectrometer (FTIR): Theory, Practice, and Applications

Wed, Feb 10, 2021 1:00 PM - 2:00 PM EST

This webinar with John D. Gilmore and Slawomir Piatek, Ph.D., of Hamamatsu will review the basic theory behind a Michelson-Morley interferometer, and will apply it directly to today's modern MEMS-based FTIR engines. The presenters will compare traditional grating-based spectrometers with FTIR, and the associated technological limitations, such as spectral coverage, signal to noise ratio and noise induced by mechanical vibration. Participants will witness a live MEMS FTIR product demonstration and will learn about FTIR applications and some market challenges and solutions. Presented by Hamamatsu Corporation.

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Choosing the Right Fused Silica for Applications in the Near-Infrared (NIR)

Tue, Mar 2, 2021 1:00 PM - 2:00 PM EST

The range of applications in the NIR spectrum is expanding. Many of these are laser based. Finding the most suitable fused silica for a particular application can be challenging. In this webinar with Todd Jaeger, Ph.D., Head of Sales - Optics at Heraeus Conamic, you will learn about what material properties affect performance, what characteristics are key for your application and how to balance price and performance. Presented by Heraeus Conamic (Heraeus Quartz North America).

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Featured Video

Mildex Inc. - Automatic Lens Centering Machine with Robot

Model SPCM-M1-AT50 lens centering machine features an integrated robot for loading and unloading the workpieces increasing throughput, efficiency and precision. This machine can process spherical lenses and/or plano-plano workpieces up to 82mm diameter.

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Next Issue:

Features

Lasers for Flow Cytometry, Fiber Network Components, Fiber Lasers, 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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