

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.



Learn more about the latest advances and emerging applications in **lasers, optics, spectroscopy, and biomedical imaging.**

Access free webinar presentations on demand now ▶

3D Imaging Sees Growth in Multiple Dimensions

From time to time, we all find ourselves forced to rummage through the cluttered jungle of our home "junk drawer" to dig out a screwdriver, battery, paper clip, or other much-needed object. For humans, this is merely cause for fleeting irritation — but for robots working on a factory floor, this same problem poses a major technological challenge.

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SOI Technology Lights Up the Next Wave of Photonics Solutions

Silicon has been the mainstay of micro-nanoelectronics since the late 1950s, being widely adopted for electronic devices and complementary metal oxide semiconductor (CMOS) technologies. In the early years of the semiconductor industry, germanium was the favored material for electronic applications due to its higher carrier mobility; however, innovations at Bell Labs in surface passivation by thermal oxidation processing enabled a breakthrough in silicon semiconductor technology in the second half of the 1950s. Thermally grown silicon dioxide layers significantly reduce the concentration of electronic states at the silicon surface to electrically stabilize such interfaces. This capability has helped fuel broad adoption of silicon as the main vector of Moore's law in CMOS technology, driving its democratization to mass-market applications.

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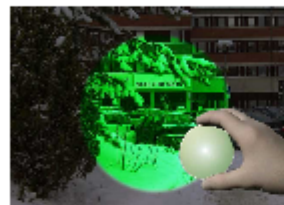
Lasers and LEDs Layer on New Capabilities for Additive Manufacturing

Additive manufacturing, aka 3D printing, offers an alternative to conventional manufacturing and assembly methods by building products layer by layer. In addition to enabling heretofore impossible part geometries, the technology also hints at a future in which items could be fabricated anywhere, as needed, from a digital blueprint.

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.: Featured Products



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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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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Glass Processing & Automation

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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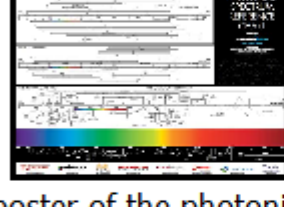


HEIDENHAIN's New LIC 3100 Absolute Kit Encoder

Heidenhain Corporation
HEIDENHAIN is proud to introduce a new high-accuracy motion feedback encoder that can now be used for absolute positioning in machines in the semiconductor, metrology, and robotic industries. This new LIC 3100 absolute kit encoder is an additional offering that fits between HEIDENHAIN's...

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Photonics Spectrum Reference Chart

Photonics Media
This full-color, 30 × 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 2018 to reflect the changing technologies in the photonics industry.

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Your Innovative ONE-STOP Ultra-Short Pulse Laser Solution Partner

CASTECH INC.
CASTECH has been a pioneer and global leading supplier of crystals, precision optics, and laser components since 1990. With 30 years of experience and unique technologies, CASTECH now is a proven expert on ONE-STOP Ultra-Short Pulse laser solutions.

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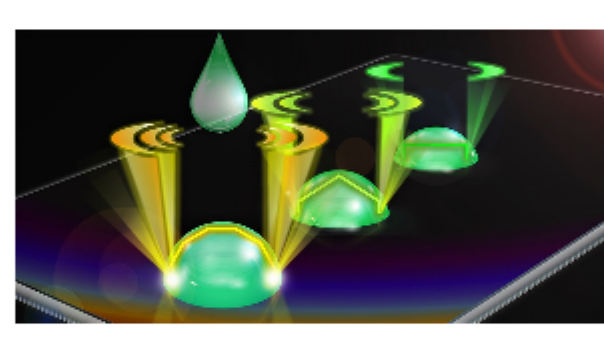


.: In Case You Missed It

Droplet Laser Mechanism May Increase Understanding of Interfacial Forces

Researchers from Nanyang Technological University found an oscillation mechanism of water droplet resonators, in which the mechanism's laser resonates along the droplet-air interface in the vertical plane. This discovery could lead to a better understanding of interfacial forces and, specifically, the possibility of using optical resonance to amplify changes to the forces.

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Laser-Powered Nanomotors Follow Their Path

Researchers from the Institute of Industrial Science at the University of Tokyo have designed linear nanomotors that can be made to move in controlled directions by laser light. The technology has applications in microfluidics, including lab-on-a-chip systems with optically actuated pumps and valves, and the researchers envision using the technology to develop a new platform for nano-size machinery with moving parts that follow predetermined paths while being propelled by unfocused light.

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Retinomorph Sensors Detect Motion Like Mammals Do

A perovskite optical sensor, featuring an ultrathin perovskite semiconductor layering, has demonstrated the ability to perceive changes to its visual field in much the same way the human eye. The technology relies on ultrathin layers of perovskite semiconductors that, when exposed to light, change from strong electric insulators to strong conductors.

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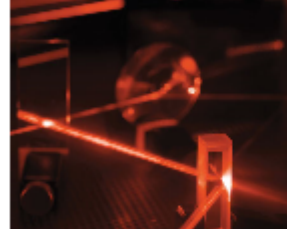
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Virtual Event: March 8-12, 2021

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.: Upcoming Webinars



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 effect 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

Radiant Vision Systems, Test & Measurement - Improving MicroLED Display Quality Using Pixel-Level Measurement and Correction

Radiant Vision Systems is chosen by microLED innovators to improve the visual quality of displays through measurement and correction of LED output. By measuring the luminance and color of each microLED subpixel, output is adjusted to produce displays of entirely uniform appearance. In this video, see how Jasper Display Corporation uses Radiant's pixel uniformity correction (demura) solution as part of their starter kit to help manufacturers achieve efficient microLED microdisplay development while ensuring display quality.

[Watch Now](#)

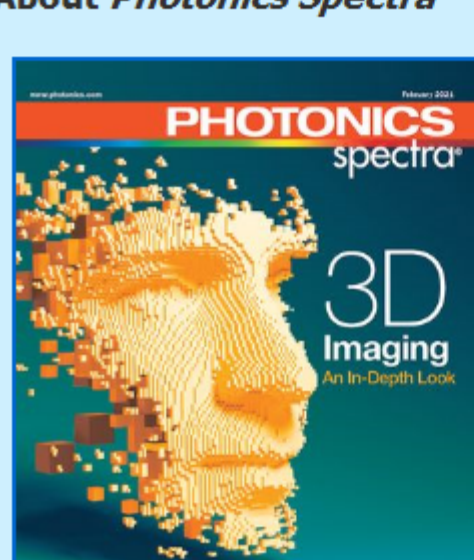
.: Next Issue:

Features

Cytometry, Fiber Lasers, Spectroscopy, 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.

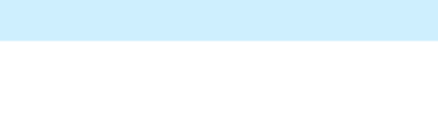
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