

This Week in PHOTONICS



LightMachinery
Excellence in Lasers and Optics



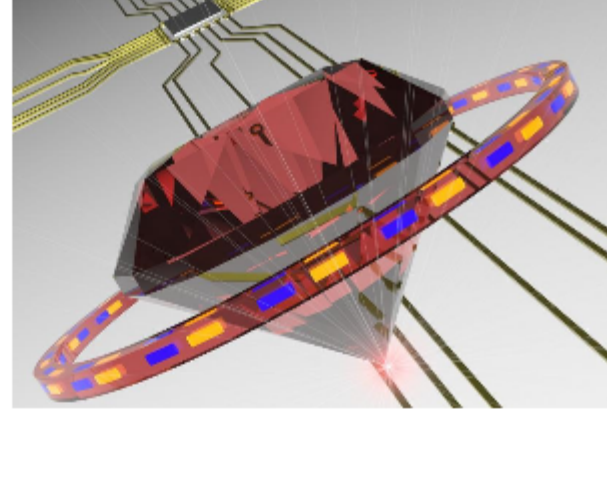
Hyperfine Spectrometer
A sub-picometer resolution spectrometer in a compact package.

Correction: The subject line of last week's "This Week in Photonics" newsletter misidentified the coordinating and managing body of an Earth observation program. Lynred will supply its Next-Generation Panchromatic (NGP) SWIR detector for the Copernicus program. Copernicus is an EU program.

:: Top Stories

Low-Cost Synthetic Diamond Fabrication Could Step Up Quantum Tech

Using a thin tungsten layer as a restraining, conductive, removable hard mask, researchers at the University of Technology Sydney (UTS) developed a method for the fabrication of synthetic diamond. The developed material can be used for the photonic circuitry used in quantum technologies.



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Printable Device May Restore Sight to the Blind

An "artificial retina" developed at the University of Sydney may one day restore sight to the blind, according to its creator, Matthew Griffith of the Australian Centre for Microscopy & Microanalysis and the School of Aerospace, Mechanical and Mechatronic Engineering.



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Hyperspectral Imaging, OCT Team to Detect Early Biomarkers of Alzheimer's Disease

A research and engineering team collaborating with the international research and development group imec used imec's hyperspectral snapshot camera, SNAPSCAN, to collect information from 16 spectral bands in a single capture. The team is exploring retinal imaging techniques to quantify the accumulation of amyloid-beta protein in the brain.



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:: Vision Spectra Conference



Presentation: "Shrinking Pixels and Growing Sensors: Two Approaches for Increasing Resolution"

Presented by: **Greg Hollows, Edmund Optics**

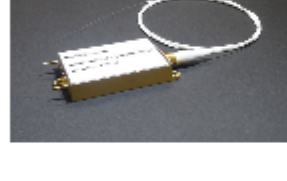
The drive for continuous innovation in machine vision results in a constantly increasing demand for higher resolution. Sensor manufacturers can take two main approaches to meet demand: They can either shrink pixels, or increase sensor size. Both options come with tradeoffs, in terms of sensor performance, and with the imaging optics used with them. Because of fundamental limitations in the pixel size that can be successfully used with traditional imaging optics, the sizes of the sensor and mounting interface must increase to accommodate demands for higher resolution.

Greg Hollows, vice president of the Imaging Business Unit at Edmund Optics in Barrington, N.J., goes into the meaning of this trend for lenses; the challenges the trend introduces for builders of machine vision systems; and solutions for getting the most out of sensors and lenses.

The inaugural Vision Spectra Conference runs July 20 - 22. Registration is free for the event, which is offered exclusively online. For more information and registration, please visit www.photonics.com/vsc2021. Continued coverage of this inaugural event will also be available on vision-spectra.com and Photonics.com leading up to the conference.

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:: Featured Products



Compact Wavelength Stabilized Diode

PhotonTec Berlin GmbH
PhotonTec Berlin expands its wavelength stabilized diode family with a new 976 nm 100 W diode in a very compact hermetically sealed 2-pins package measuring only 76x38x12 mm. The module is rigorously tested and validated to ensure long term reliability and lifetime.

[Visit Website](#)

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Difficult Coatings Made Easy

Deposition Sciences Inc. (DSI)

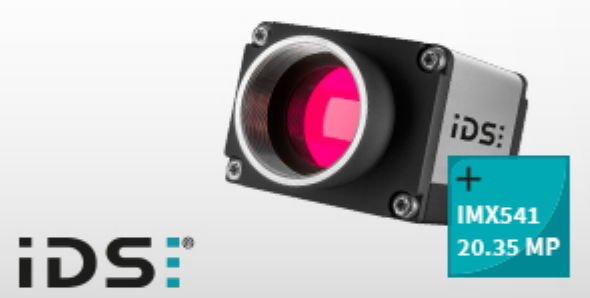
Complex Recipes? We have you covered with our highly reliable, durable, and heat-resistant optical coatings which include Conformal AR's, AR coated ball lenses, Patterned Dark Mirrors, Bandpass Filters, and Coating Flexible substrates. Contact us today to discuss your next project.

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SONY Pregius™ S MAXIMUM PERFORMANCE

Next generation sensor **IMX541** now available in the versatile **uEye SE!**



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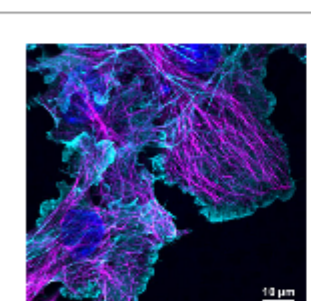
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:: Upcoming Webinars



Multi-Line Lasers or Laser Combiners: What Solution Is Best for Fluorescence Imaging?

Thu, Jun 17, 2021 10:00 AM - 11:00 AM EDT

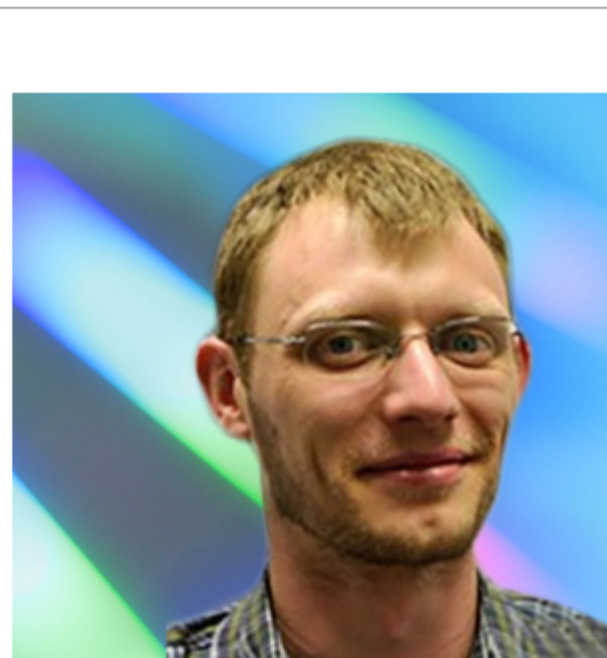
Fluorescence based microscopy for high-resolution and high-throughput multi-fluorophore imaging typically relies on the use of several individual laser sources at different wavelengths, within the same instrument. Navigating the field of laser-based multi-color excitation options can be challenging. In this webinar Melissa Haahr and Helge Schmidt, Ph.D., of HÜBNER Photonics discuss the advantages of multi-line lasers and laser combiners with the aim to help identify the suitability of either solution for applications in fluorescence imaging. Presented by HÜBNER Photonics.

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:: All Things Photonics

Laser-induced breakdown spectroscopy is the technology behind a newly developed forensic technique for tire chemical analysis. University of Central Florida's Matthieu Baudelet, who introduced the method in a recent *Applied Spectroscopy* paper, explains the approach and how it is poised to enhance crime scene investigation. Pierre Türschmann, CEO of Interference, talks about how the company is working to resolve the bottleneck of reproducibility in microscopy.



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