

This Week in PHOTONICS



LightMachinery
Excellence in Lasers and Optics



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

Top Stories

NIST's Comb Systems Measure All Primary Greenhouse Gases in the Air

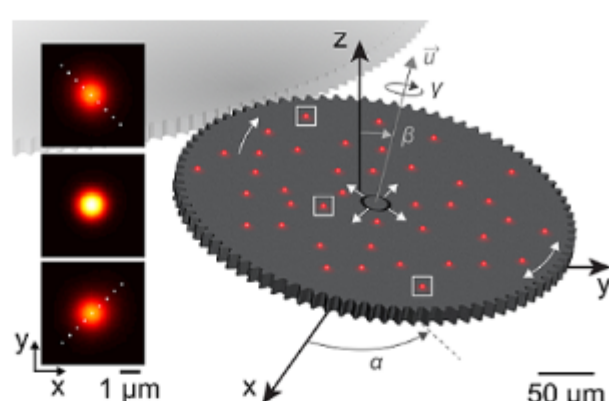
National Institute of Standards and Technology (NIST) researchers upgraded their laser frequency-comb instrument to simultaneously measure nitrous oxide, carbon dioxide, water vapor, and the major air pollutants ozone and carbon monoxide. The work specifically involves a shift from the spectrum of light analyzed in the near-infrared to the mid-infrared to enable the identification of more and different gases.



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Microscopy Method for Measuring in 3D Relies on 2D Optical Imperfections

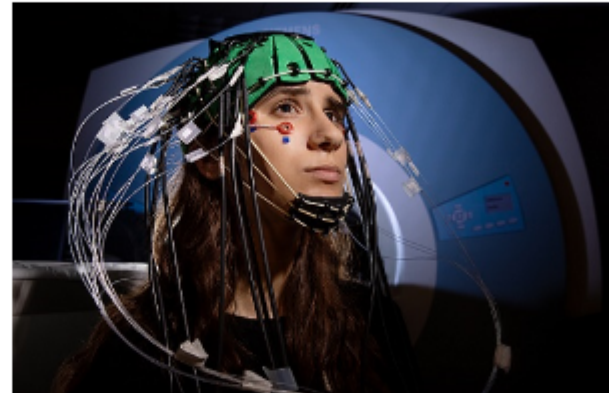
Researchers have devised a calibration method that enables conventional microscopes to accurately measure the positions of points of light on a sample in all three dimensions. The researchers took a problem that affects nearly all optical microscopes — lens aberrations — and used the effects of aberrations to allow precise and accurate tracking of single emitters in 3D throughout an ultrawide and deep field.



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Three Imaging Techniques Augment Brain Imaging Precision

Researchers from the University of Illinois Urbana-Champaign, working with domestic and international collaborators, have combined three imaging techniques to detect the timing and location of brain responses to a stimulus. The researchers said the study is the first to combine the three technologies for simultaneous imaging of brain activity.



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Vision Spectra Conference

Panel Discussion: Systems Integrator Forum

Presented by:

- Darcy Bachert, Prolucid Technologies Inc.
- Tom Brennan, Artemis Vision
- David L. Dechow, Integro Technologies Corp.
- Steve Wardell, ATS Automation

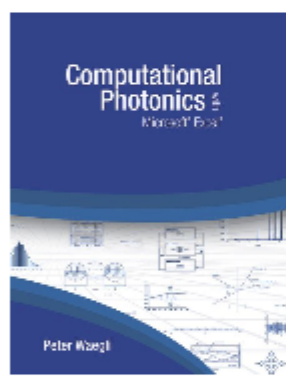
Industry is increasingly looking to machine vision and automation to help solve complex production challenges across industries. Whether the solution involves deep learning, robotics, AI, or hyperspectral imaging, there's no shortage of tools to choose from. Hear firsthand from several of the world's foremost experts, and discover what trends are on the horizon.

The Systems Integrator Forum will be facilitated by Michael Wheeler, editor in-chief of Photonics Media, and feature discussion with Darcy Bachert, of Prolucid Technologies; Tom Brennan, of Artemis Vision; David L. Dechow, of Integro Technologies; and Steve Wardell, of ATS Automation. Attendees will hear firsthand perspectives from the four industry leaders, who will share executive and end-user perspectives on vision systems integration and offer insights on emerging technologies and applications.

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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