

This Week in PHOTONICS

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LightMachinery
Excellence in Lasers and Optics



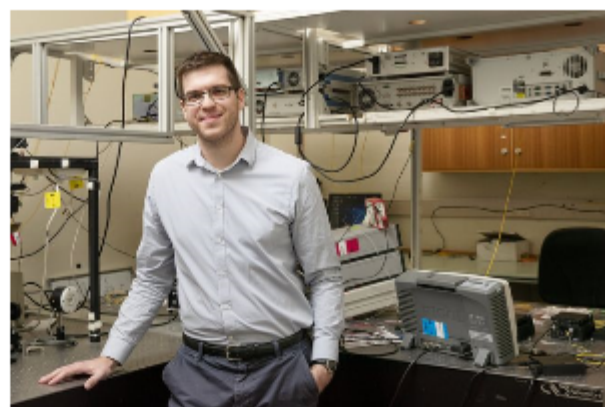
Hyperfine Spectrometer
A sub-picometer resolution spectrometer in a compact package.

.: Top Stories

Researchers Define New Law in Laser Physics

Scientists at the University of Sydney Institute of Photonics and Optical Science have developed a new type of laser that can deliver high amounts of energy in short bursts, with potential applications in eye and heart surgery or the engineering of delicate materials.

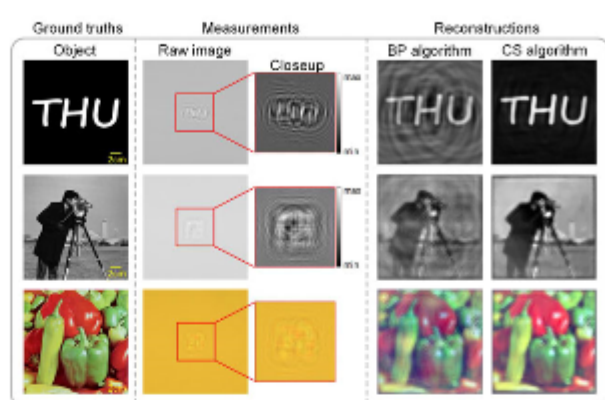
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Lensless Camera Uses Fresnel Zone Aperture, Incoherent Illumination to Improve Images

To reduce noise in a thin, lensless camera, researchers at Tsinghua University and MIT built an imaging system with a Fresnel zone aperture (FZA). In addition to introducing a Fresnel optical element into the camera, the researchers used a compressive sensing algorithm to improve the quality of reconstructed images.

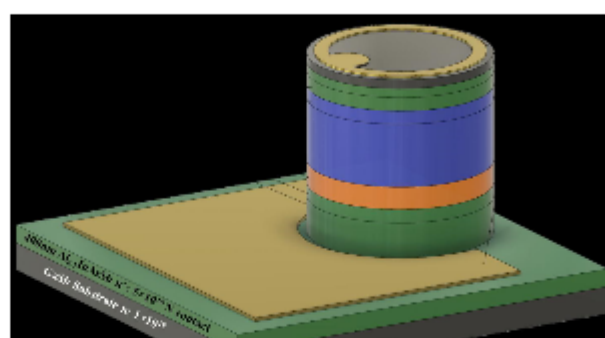
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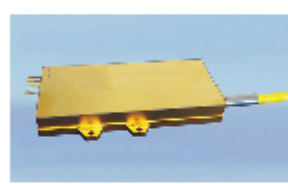
Avalanche Photodiode Is High-Power and Eye-Safe for Lidar

A low-noise avalanche photodiode (APD) for 2- μ m detection, developed by engineers at the University of Virginia (UVA) and the University of Texas-Austin (UT-Austin), could provide high-power, eye-safe light imaging, detection, and ranging for lidar applications. According to the team, the new APD has demonstrated record performance.

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.: Featured Products



Wavelength Stabilized Laser Diode

PhotonTec Berlin GmbH
PhotonTec Berlin expands its wavelength stabilized diode family with a new high-brightness 976 nm diode of 140 W power from a 105 μ m core and 0.22NA fiber pigtail. Utilizing volume grating, the emitting wavelength is stabilized at 976 nm and insensitive to operating temperature and current.

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HyperFine Brillouin Spectrometer

LightMachinery Inc.
The great challenge with Brillouin spectroscopy is that the scattered signal from the un-shifted wavelength of the laser can overwhelm the small Brillouin shifted return signal. LightMachinery has combined its leading-edge HyperFine spectrometer with a very narrow band tunable filter to suppress the bright un-shifted laser frequency.

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.: Upcoming Webinars



A New Approach to Interferometry: Unlocking New Possibilities in UV/VIS Spectroscopy

Wed, Jun 17, 2020 10:00 AM - 11:00 AM EDT

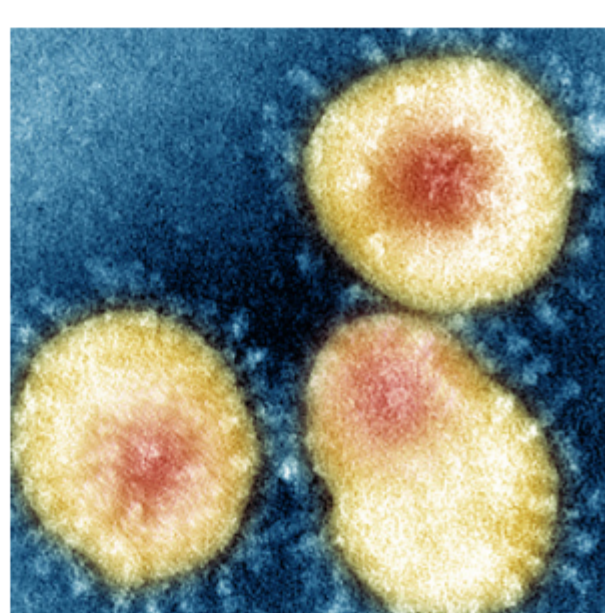
This webinar will describe ultrastable, common-path (CP) interferometry and how CP interferometry can provide all the advantages of Fourier-transform spectroscopy down to the UV-VIS spectral regions, in a compact device. The operation principle of a CP interferometer will be presented, together with a few applications, such as the measurement of Time-Resolved Emission Spectra (TRES) with picomolar sensitivity and Excitation-Emission Maps (EEM) down to the ultimate sensitivity, by detecting fluorescence/EEM of single molecules at room temperature. Finally, novel applications of the interferometer for hyperspectral imaging will be presented.

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.: All Things Photonics

In the final episode of Season 1 of *All Things Photonics*, Tom Hausken, senior industry advisor from OSA, reviews the photonics market and its recovery from the COVID-19 pandemic. Also, more from Coherent's new CEO Andy Mattes and COO Mark Sobey.

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