

This Week in PHOTONICS

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LightMachinery
Excellence in Lasers and Optics

Picometer Resolution

Powered by Virtually Imaged Phase Arrays (VIPAs), LightMachinery's HyperFine spectrometers offer single shot, picometer resolution laser spectrum analysis.

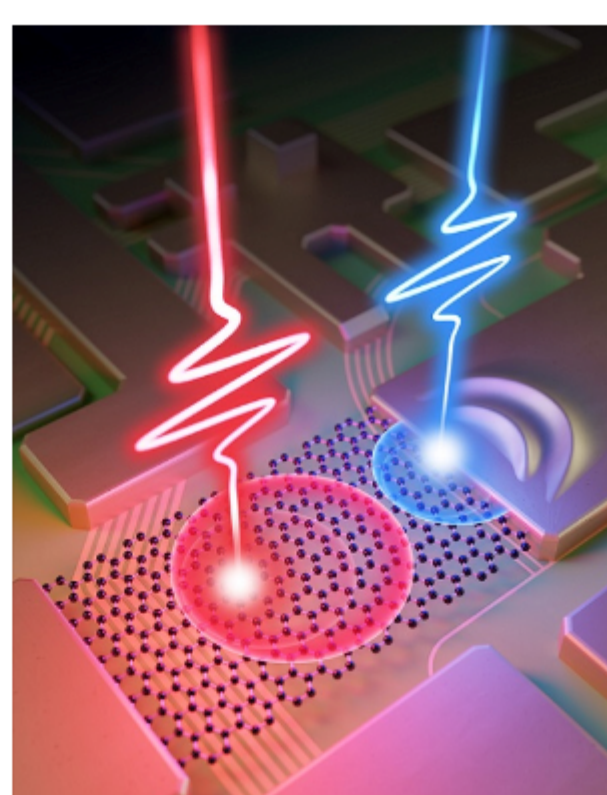


Top Stories

Laser-Based Logic Gate Expedites Info Processing

A logic gate developed by researchers from the University of Rochester and the Friedrich-Alexander-Universität (FAU) Erlangen-Nürnberg operates at femtosecond timescales, potentially enabling information processing at the petahertz limit. Logic gates, the basic building blocks necessary for computation, control how incoming information is processed.

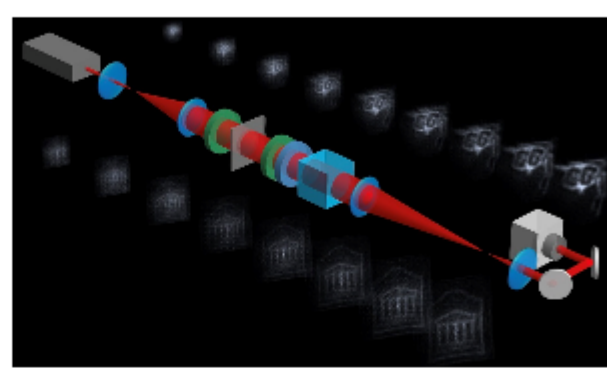
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Liquid Crystal-Based Devices Manipulate Light with Flat Optics to Uncover Hidden Images

An ancient optical illusion has been updated using the flat optics of today to create a device that reveals a hidden image when light is shined on it. Developed at the University of Ottawa, the magic window is a liquid crystal-based device that can produce any image desired — an effect that could potentially be used in 3D displays.

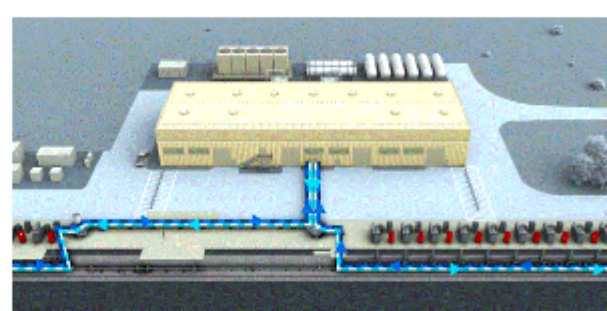
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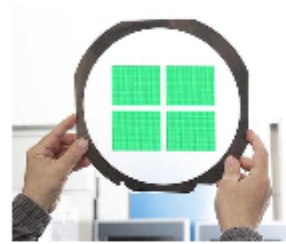
X-Ray Laser Achieves Its Final, Colder-Than-Space Temperature

The superconducting particle accelerator, an upgrade to the Linac Coherent Light Source (LCLS) x-ray free-electron laser at the U.S. Department of Energy's SLAC National Accelerator Laboratory, has been cooled to a temperature of -456 °F, or 2 K. At this temperature, the particle accelerator can boost electrons to high energies with nearly zero energy lost in the process.

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Featured Products & Services



Optical Filters for Point of Care

Delta Optical Thin Film A/S

Point of Care (PoC)

instruments have various uses in medical diagnostics, including the detection of infectious diseases such as Covid-19. These types of tests only require a single drop of blood, saliva, or urine and can be performed by a GP within minutes. Many tests require absorbance or fluorescence detection methods, which all demand optical filters. The optical filter is one of the most important components of a PoC instrument.

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Machine Vision

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Machine Vision is a book for anyone designing or selecting machine vision systems, and implementing or considering the use of machine vision for a specific application. This engaging overview is a resource for designers, engineers, researchers, marketers and students looking for a broad survey of advancements in systems, components and processes, as well as some applications that are making good use of them.

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Messe Stuttgart

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SPIE OPTICS+ PHOTONICS
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21-25 August 2022
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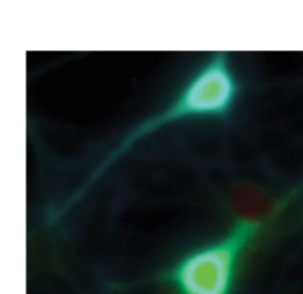
Upcoming Webinars

Embedded Vision Application Development for Everyone

Tue, May 31, 2022 11:00 AM - 12:00 PM EDT

As the use of artificial intelligence (AI) and machine learning innovates the approach to vision-based solutions, so too must intelligence of embedded vision systems innovate the development process of applications. Kevin McCabe shares how IDS Imaging, Inc. is embracing this shift with the IDS NXT embedded vision platform. Equipped with this new, fully customized and flexible development environment, a broad set of user groups can intuitively design their own applications. Using this embedded vision platform saves time and costs when commissioning and setting up individual image processing applications with AI. Presented by IDS Imaging, Inc.

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Advances in LED Illumination for Fluorescence Imaging

Thu, Jun 2, 2022 10:00 AM - 11:00 AM EDT

LED illumination for fluorescence microscopy systems has progressed significantly. Kavita Aswani Ph.D. describes the latest advances in illumination for fluorescence imaging, from near-UV to NIR fluorophores. LED illumination systems are successfully replacing traditional arc lamps in calcium imaging applications and producing equivalent results with the convenience of LEDs. IR versions of the light sources allow imaging of the popular ICG (indocyanine green) and IR800 dyes. They provide high signal to-noise ratios because of the low background in the NIR region. NIR wavelengths also allow for greater depth penetration in thicker tissues and living animals. Presented by Excelitas Technologies Corp.

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