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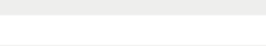
Top Stories

Photoelectrochemical Cell Captures Excess Photon Energy

A proof-of-principle photoelectrochemical cell capable of capturing excess photon energy that is normally lost to generating heat could produce solar fuels. Scientists at the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) used quantum dots (QDs) and Multiple Exciton Generation (MEG) to push the peak external quantum efficiency for hydrogen generation to 114 percent. This could significantly boost the production of hydrogen from sunlight by using the cell to split water at a higher efficiency and lower cost than current photoelectrochemical approaches.



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Surveillance Robots Could Relieve Humans of Dangerous Jobs

A new system that allows a team of robots to share and interpret information as they move around could enable these same robots to relieve humans of dangerous jobs such as disposing of landmines, cleaning up after a nuclear meltdown or surveying the damage after a flood or hurricane.



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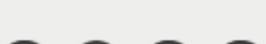


Novel Microscopy Method Enables Simultaneous Imaging of 24 Molecules

A novel microscopy platform with enhanced detection sensitivity could allow for more comprehensive, system-wide labeling and imaging of greater numbers of biomolecules in living cells and tissues than is currently possible. The platform, called electronic pre-resonance stimulated Raman scattering (epr-SRS) microscopy, offers high levels of sensitivity and selectivity. The study also details the creation of new molecules that, when paired with the novel microscopy method, allow for the simultaneous labeling and imaging of up to 24 specific biomolecules.



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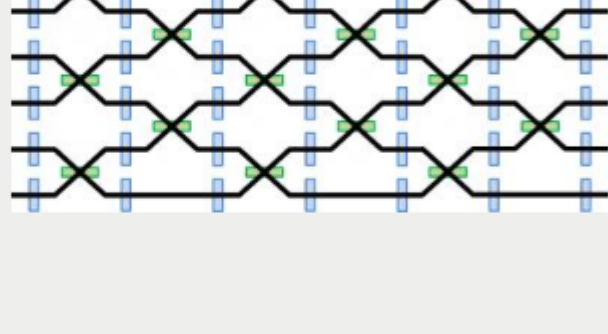
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"Virtual" Interferometers Could Minimize Size of Optical Processing Circuitry

A novel technique dubbed "measurement-based linear optics" could enable miniaturization of the optical processing circuitry required for quantum computers by using virtual interferometers instead of large-scale physical ones. According to researcher Rafael Alexander, conventional interferometers that comprise hundreds or even thousands of optical elements are essential to implementing fully functional optical quantum computers.



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Imaging Array Captures Details as Small as a Fingerprint from a Distance

A camera that can capture a detailed micron-resolution image from a distance uses a laser and techniques that borrow from holography, microscopy and "Matrix"-style bullet time. Engineers from Rice and Northwestern Universities built the prototype device that compares interference patterns between speckled images by reading a spot illuminated by a laser, which captures the pattern with a camera sensor.



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Northrop Grumman Opens New, High-Tech Facility [Read Article](#)

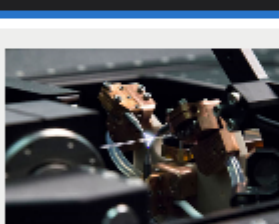
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3SAE Technologies Inc.
The 3SAE Combiner Manufacturing System (CMS) is a vacuum based optical glass processing system designed to maintain production level repeatability for combiners and other fused optical components. The CMS includes tapering, cleaving, bundling, and splicing utilizing 3SAE's patented Thermally Stabilized Plasma™ technology.

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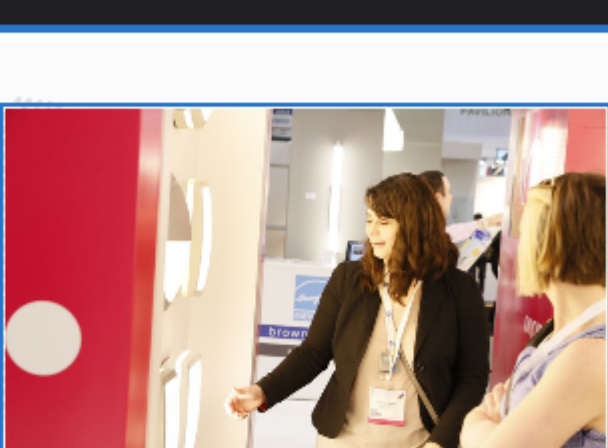
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Industry Events

LIGHTFAIR International 2017

May 7-11, 2017 - Philadelphia Convention Center - Philadelphia United States
LIGHTFAIR International 2017, the world's largest architectural and commercial lighting trade show, is where light, technology and design converge. More than 550 of the world's leading manufacturers will showcase their latest technologies and innovations in over 200,000 square feet of exhibit space. The conference also offers 200+ hours of world-class accredited education. Accredited courses range from 60 minute classes to 2-day immersion sessions at every level, from foundational to advanced as well as general courses on retrofitting buildings, managing LED costs and much more.



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Webinars

Introduction to Machine Vision Software

Thu, May 11, 2017 1:00 PM - 2:00 PM EDT

Learn how to best utilize machine vision software to integrate and optimize a machine vision solution across a variety of industries, including pharmaceuticals, packaging, electronics and manufacturing. Presenter Tom Brennan, an AIA Advanced Approach Certified Professional, will cover several machine vision software level classes and algorithms including image representation and color spaces, image processing, parallel programming and artificial intelligence. Brennan will walk attendees through how these algorithms and methods enable new technologies such as vision guided robotics, high-speed imaging, thermal/IR imaging and 3D imaging. This webinar is sponsored by Euresys s.a.

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