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LIGHT EXCHANGE





Laser Inserts DNA into Cells with a Light Touch

Common techniques to force DNA into cells can be clumsy or even violent, but a team in South Korea developed the most precise method to date by combining two high-tech laboratory techniques. The method allows holes to be poked precisely on the surface of a single cell with a high-powered femtosecond laser, then a piece of DNA is gently tugged through the hole using optical tweezers. "What is magical is that all this happens for one cell," said team member Yong-Gu Lee, an associate professor at the Gwangju Institute of Science and Technology. "Until today, gene transfection has been performed on a large quantity of agglomerate cells and the outcome has been observed as a statistical average and no observations have been made on individual cells."

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MEDIA

Light Stopped for a Minute

At a speed of 186,000 miles per second, nothing travels faster than light. So getting it to slow down is a formidable challenge, let alone getting it to stop. But physicists in Germany report they used a glass-like crystal to stop light for about one minute, which could have important implications for light-based data processing. Read Article >> Share

IR Tomography Goes Full Color

Combining Fourier transform infrared (FTIR) spectroscopy with computed tomography creates a non-destructive, 3-D imaging technique providing full-color, molecular-level chemical information of unprecedented detail on biological and other samples with no need to stain or alter the specimens, says a team from Lawrence Berkeley National Laboratory and the University of Wisconsin-Milwaukee.

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CCTV Lenses

Universe Kogaku (America) Inc. Universe Kogaku America adds to its existing line of High Resolution lenses with a series of cctv lenses with locking focus, available in focal lengths from 8mm to 50 mm.

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Gould now offers 2000nm couplers for both singlemode and polarization maintaining (PM) couplers. Gould manufacturers it's couplers using our proven Fused Biconical Taper (FBT) process.

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Kentek Corporation KENTEK offers the most complete and versatile enclosure systems for applications requiring an eye-safe operating environment for industrial, medical, and research laser systems.

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Optometrics has a distinguished 40 year history of manufacturing, and providing custom advanced optical components to OEM instrument manufacturers for a wide range of spectroscopic, laser and wavelength selection applications. More info >>

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3-D Images Created From a Single Lens

New Center to Advance Freeform Optics

A computational method developed at Harvard called light-field moment imaging creates 3-D images using a single, stationary lens, a discovery that could have implications for medical imaging and even future 3-D

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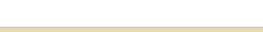
center led by the universities of Rochester and North Carolina at Charlotte. Read Article >>

Light Moves, Molds Gels

More than \$4 million in federal, industry and academic funding aims to advance freeform optics through a new

Researchers at the University of Pittsburgh used light to reconfigure hydrogels and induce self-sustained motion. This biomimetic behavior in a non-living organism could have significance for a host of medical applications, including microfluidics and optics.

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On this edition of the industry's only weekly newscast: a 3-D image is created through a single lens, hydrogels are controlled and moved with light, a new center aims to advance freeform optics, and the Mars rover Curiosity marks one year on the Red Planet. Hosted by Photonics Media's Melinda Rose and Laura Marshall.

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Machine Vision System Measures Swimmer Biomechanics

Athletes competing in the 15th FINA World Swimming Championships in Barcelona were monitored by an advanced image-processing system designed to capture biomechanical data, such as pass times and velocities, turns, stroke frequency and amplitude.

Sydor Optics Receives ISO Certification

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its US and international customers a globally recognized standard of quality assurance.





The precision optics manufacturer received ISO 9001:2008 certification quality management standards, affording

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IRSC to Establish Lasers and Fiber Optics Center Under a \$2.9 million grant from the National Science Foundation, Indian River State College (IRSC) in Florida will

establish a regional center to meet a growing need for trained laser and fiber optics technicians. Read Article >>











High blocking optical filters deliver critical optical control in a wide variety of consumer and industrial products. Highly attenuating (i.e., high optical density) filters are used in personal protective equipment, such as laser safety eyewear, through to precise, low light level control in optical systems for enhanced sensitivity at preferred wavelengths. This technical overview demonstrates the performance of the Cary 7000 UMS for the measurement of such materials.

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Industry Events

IEEE Photonics Conference 2013 - September 8 - 12, 2013 · Seattle, WA The unveiling of breakthroughs in photonics will top the agenda when the world's leading

technologists in the field convene in the Seattle area in September for the annual IEEE Photonics Conference (IPC-2013), formerly called the IEEE LEOS Annual Meeting.

Some 600 scientists, engineers and technical managers will gather from September 8-12 at the Hyatt Regency Bellevue Hotel for an IPC-2013 program of invited talks, paper presentations, panel sessions, special symposia, networking opportunities, and a product

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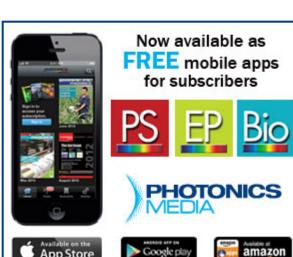


FEATURED VIDEO

Aerotech's Byron Fruit presents the Ensemble LAB stand-alone

motion controller for up to four axes of brush, stepper or brushless AC motor control, MPS series miniature linear and rotary and lift positioning stages, and ANT series nanopositioners at CLEO 2013, www.aerotech.com sales@aerotech.com 101 Zeta Drive Pittsburgh, PA 15238 (412)



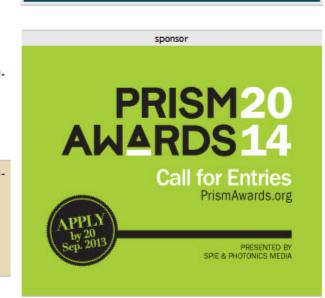




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