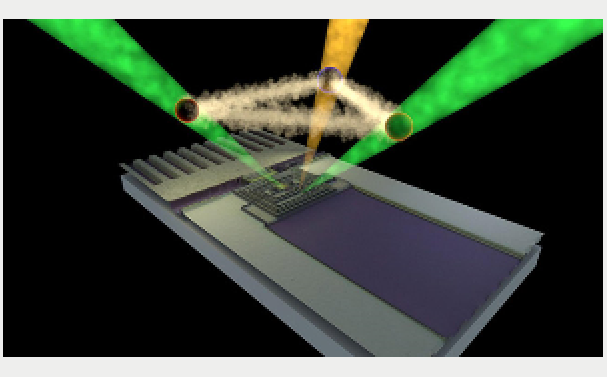
Thursday, September 8, 2016

This Week In PHOTONICS

PHOTONICS MEDIA

Top Stories

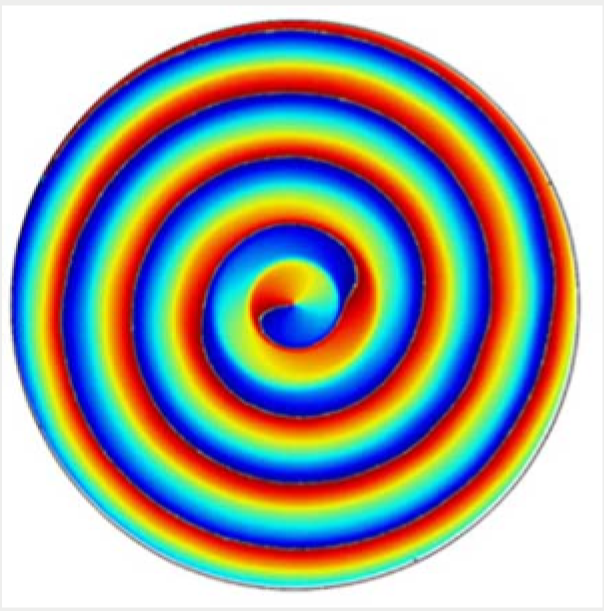
Photon Pairs May Contribute to an Alternate Approach to Quantum Computing



Microwave signals comprising correlated photons could be used to code information for quantum computing and may offer an alternative use of optical systems to build quantum computers. Researchers at Aalto University chilled a microwave resonator to nearly absolute zero temperature — the point at which any thermal motion freezes — to correspond to a state of perfect darkness. In this quantum vacuum state no photon is present, but there exist fluctuations that can bring photons in and out of existence for a very short time.

Read Article

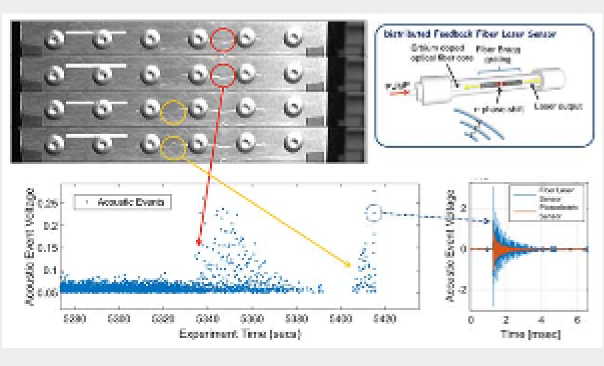
Vortex Laser May Help Shape the Future of Data Transfer



A light-based communications tool that is structured to carry data in a helical path may enable fast transfer of large amounts of data, resolving potential bottlenecks in data transfer as the demand for information sharing grows. The novel technique uses a vortex beam that travels in a corkscrew pattern, encoding data into the vortex twists. The shape of the beam enables it to encode data for optical communications with greater freedom than a conventional laser, giving it the potential to carry ten times or more information than lasers that move in a linear direction.

Read Article

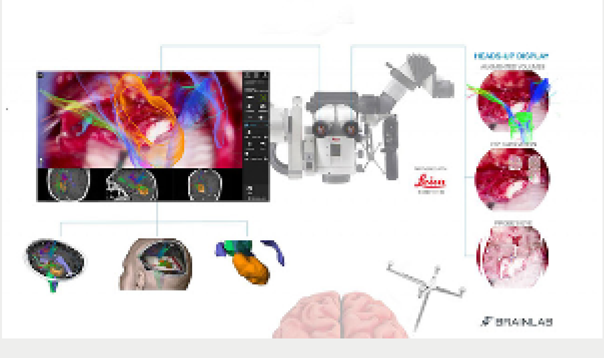
Laser Sensor Can Detect Damage to Military Assets



A distributed feedback fiber laser sensor has detected acoustic emission signatures associated with cracks in riveted lap joints, demonstrating that it has the potential to uncover structural damage in U.S. Navy assets before the damage reaches critical levels. Developed by researchers at the U.S. Naval Research Laboratory (NRL), the laser sensor consists of a single fiber, similar in width to a human hair, which is integrated into a shallow groove formed in the lap joint. The sensor has a small system footprint and can be multiplexed.

Read Article

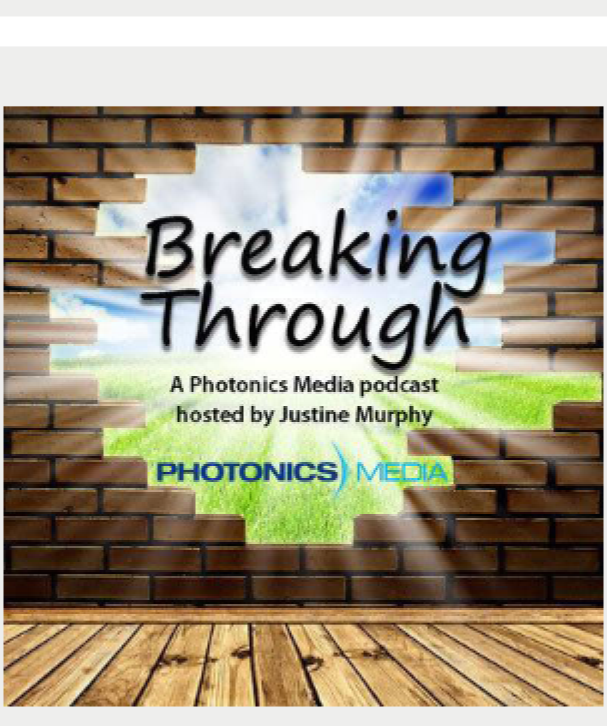
Virtual Reality May Offer Advances in Microscope Imaging



A novel microscope image injection system has demonstrated the ability to relay virtual reality imaging to a surgeon through an eyepiece, known as the ocular, during microscopic surgery. The system, named CaptiView, allows images to be superimposed into the surgeon's eyepiece and projects a heads-up display into the eyepiece while the surgeon is operating. The heads-up display provides neurovascular and fiber-track information in 2D or 3D as well as the on-screen video overlays visible through the ocular.

Read Article

Breaking Through: Women in Photonics, ep.1 Andrea Armani



This premiere episode features Andrea Armani, an associate professor of chemical engineering and materials science, and electrical engineering and electrophysics at the University of Southern California. She shares her personal experience as a woman in the field, how she sees women's roles evolving, and her views on women of all ages breaking through antiquated boundaries.

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Featured Products

LedHUB Multicolor LED Light Engine

Omicron-Laserage Laserprodukte GmbH

Omicron's innovative "LedHUB LED Light Engine" represents a new form of LED light source for science and research. The high-performance system can be equipped with one to six LED modules of different wavelengths from UV to the near IR range and offers fast analogue intensity modulation.

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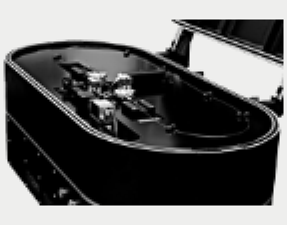

Taper Manufacturing Station (TMS)

3SAE Technologies Inc.

The production-ready Taper Manufacturing Station (TMS) with optional cleaving package is designed for use in the manufacturing of optical fiber tapers, bundles and couplers. The TMS features 3SAE's patent pending Thermally Stabilized Plasma™.

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Custom Polymer Optics

Diverse Optics Inc.

Diverse Optics manufactures custom precision polymer optics. Core processes include injection molding, single point diamond turning (SPDT), opto-mechanical design, metrology, assembly, bonding, and thin-film coating. We build-to-print even the most challenging polymer optic components, modules, and assemblies.

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Unprecedented Luminescence Lifetime Imaging Camera: the pco.flim

PCO-TECH Inc.

PCO introduces a new kind of camera system. The pco.flim is the first luminescence lifetime imaging camera. The camera has a revolutionary image sensor and makes use of fluorescence lifetime imaging in the frequency domain, making it suitable for numerous applications in the field of biomedical research.

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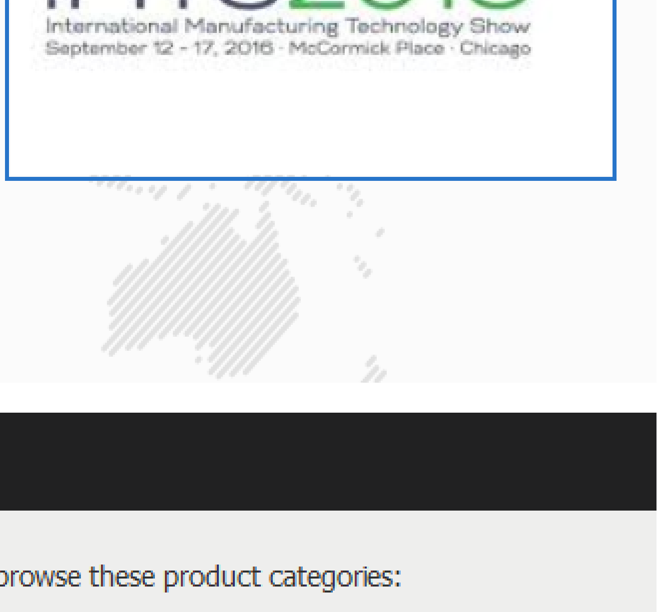
Industry Events

IMTS 2016

September 12-17, 2016 - McCormick Place - Chicago United States
Photonics Media Booth: N-6183



The International Manufacturing Technology Show is one of the largest industrial trade shows in the world, with more than 114,000 registrants for 2016. Manufacturing industry professionals from across the globe attend to see more than 15,000 new machine tools, controls, computers, software, components, systems and processes that can improve their efficiency. Over 2,000 exhibitors from the metalworking industry will display their equipment in product category pavilions. Complementing the metalworking solutions that you'll see at IMTS will be five additional co-located shows: Industrial Automation North America; Motion Drive & Automation North America; Surface Technology North America; ComVac North America; and Industrial Supply North America.

More Info

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