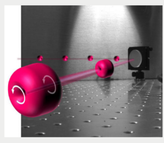
Thursday, October 6, 2016

This Week In PHOTONICS
PHOTONICS MEDIA

Top Stories

Optical Vortex Discovery Could Lead to Microscopy, Fiber-Optics Advances

3-D ring-shaped light structures, generated by high-intensity lasers, have been identified and could lead to new opportunities for the use of lasers in microscopy and telecommunications. Researchers at the University of Maryland have detected a novel type of vortex, called a spatiotemporal optical vortex (STOV), that has phase and energy circulation in a spatiotemporal plane. The STOV forms a ring around a self-focusing light pulse; and the light flows through the inside of the ring and then loops back around the outside. Light waves curl around the vortex, similar to air currents around a smoke ring.



Read Article

Novel Lens Delivers Controlled Doses of Medicine

A contact lens-based system that uses a strategically placed drug polymer film to deliver medication gradually to the eye was shown to be as effective as daily eye drops in a preclinical model for managing glaucoma. In a study supported by a grant from the Boston Children's Hospital, the effect of the drug-eluting contact lens was assessed in four glaucomatous monkeys. The researchers showed that the contact lens with lower doses of latanoprost delivered the same amount of eye pressure reduction as the eye drop version of the medication. The lenses delivering higher doses of latanoprost had better pressure reduction than the drops.

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Sensor Can Find E. coli Quickly Over Wide Temperature Range

A fiber-optic biosensor has been developed that can detect E.coli bacteria in 15 to 20 minutes. The sensor is temperature-insensitive over a wide range, making it well-suited for the accurate detection of E. coli bacteria in outdoor environments. To build the sensor, bacteriophages were bonded to the surface of an optical fiber. The bacteriophages grab E.coli bacteria from a sample and keep the bacteria attached to the fiber. When a beam of light strikes the sensor's surface, its wavelength shifts when E. coli is present, indicating E.coli contamination.

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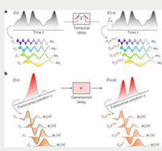
Novel Device Adds to Interferometry's Optical Capabilities

An advance in interferometry, named the Hilbert-space analyzer, may lead to novel ways of analyzing beams of light that are not dependent on temporal delays. Interferometers make minute measurements by manipulating beams of light using an optical delay — an effect that's typically achieved by adding length to one of the beam's paths, which slows the signal down. The creators of the Hilbert-space analyzer have found a way to introduce a delay that is unrelated to time.



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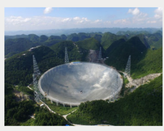
FAST Telescope Moves to Testing Stage

The Five-hundred-meter Aperture Spherical Telescope (FAST), the world's largest radio telescope, was completed in September 2016 in southwestern China's Guizhou Province, and has now entered the testing stage. The FAST telescope has the world's largest aperture, at 500 meters, and has a total area equal to 30 soccer fields.



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LightMachinery Inc.

Designed for industrial and R&D environments, LightMachinery's IPEX-700 Series lasers deliver high power ultraviolet laser machining combined with state-of-the-art performance.

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PCO's Ultraviolet Camera: Maximal UV Sensitivity, Minimal Frame Size

PCO-TECH Inc.

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Optical Prisms

A.R.W. Optical Corporation

ARW Optical Corporation manufactures custom, standard and OEM optical prisms for the UV to IR region. Provides rapid prototyping through volume production for all industries.

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e2v Launches Dual-line ELiiXA+ Line Scan Cameras

e2v

e2v's ELiiXA+ family of line scan cameras has been expanded to include two new dual-line 8k monochrome models, providing customers with 5µm pixels that can be operated in two active CMOS line modes.

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Photonex 2016

October 12-13, 2016 - Ricoh Arena - Coventry England

Visit the Photonex exhibition and meet with world leading companies. Photonex brings together all aspects of photonics industry and research, helping attendees develop strong business relationships, research solutions, and examine applications for photonics in academia, research and technology. The Enlighten Conference is offered free of charge to attendees. More than 90 exhibitors will be demonstrating their products and services at this year's conference.

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