Tuesday, November 10, 201

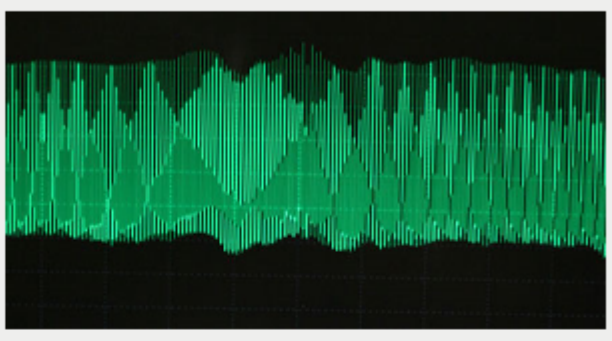
FIBER OPTICS Tech Pulse

PHOTONICS MEDIA

November 2015

Fiber Optics Tech Pulse is a special edition newsletter from Photonics Media and Nufern covering key developments in fiber optics technology.

Frequency Combs Reverse Crosstalk, Extend Range of Fiber Transmission



Frequency combs could eliminate the need for repeaters, which are necessary for maintaining signals over long distances in today's fiber optic networks. This presents a potential solution to a long-standing roadblock to increasing fiber transmission rates: Beyond a threshold power level, additional power irreparably distorts the information.

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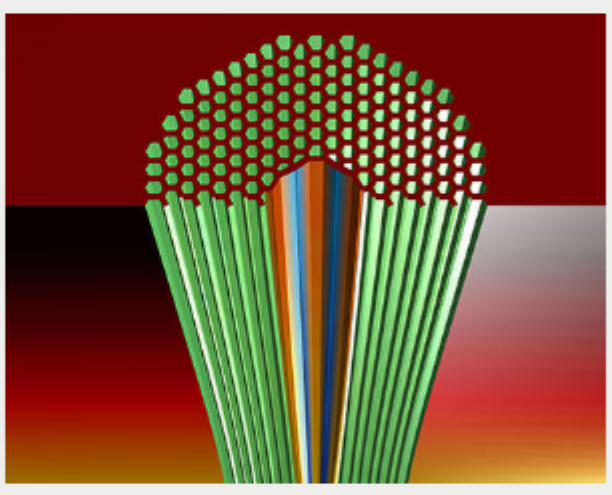
Photonic Bandgap Fiber Reaches Telecom Scale



New fabrication tools have enabled the creation of an 11-km photonic bandgap fiber that previously could only be manufactured in lengths of hundreds of meters. Its reach, as well as its low loss and a broad transmission bandwidth, make photonic bandgap fiber a candidate for telecommunications applications.

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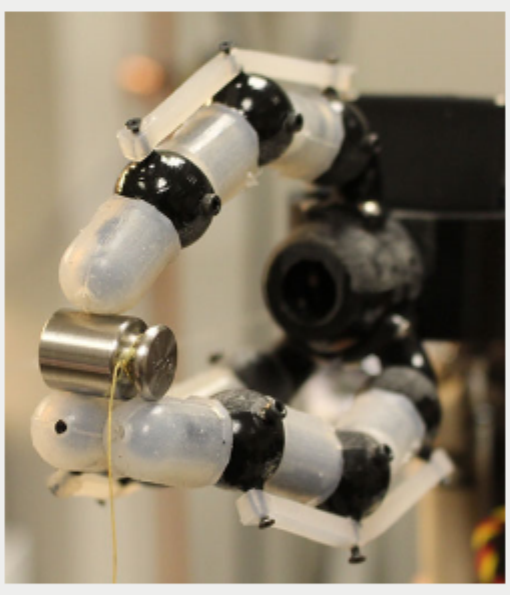
Fiber Sensors Improve Robot Touch Sensitivity



Fiber optic sensors could give robots the sensitivity needed to handle delicate objects and work safely alongside humans. A newly developed robotic hand features 14 embedded fiber Bragg grating sensors, allowing it to determine where its fingertips are in contact and to detect forces of less than a tenth of a newton. Meanwhile, a new stretchable optical sensing material could be used in a soft robotic skin to provide even more feedback.

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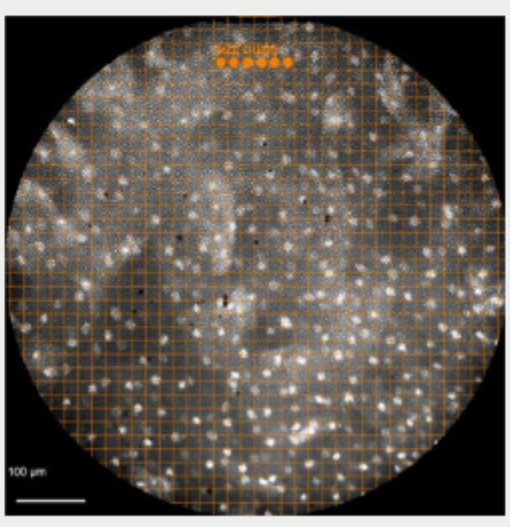
Fiber Microendoscope Could Reduce Unnecessary Biopsies



A low-cost, portable, battery-powered microendoscope could reduce the need for costly biopsies for many patients. That's the conclusion of researchers behind a clinical study involving 147 patients in the U.S. and China at high risk for esophageal squamous-cell neoplasia.

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Fiber Industry Group Pushes SWDM for Data Centers

A new industry organization aims to help data centers minimize upgrade costs by exploiting new capabilities of older optical fibers. The SWDM Alliance will promote shortwave wavelength division multiplexing (SWDM) technology, which increases the capacity of multimode fiber already common in data centers.

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