# PHOTONICS spectra

PHOTONICS MEDIA
THE PULSE OF THE INDUSTRY

**Volume 48 · Issue 4 · HIGHLIGHTS** **April 2014**

## Nanophotonics Underpins Some Groundbreaking Technologies

Nanophotonics is now a major research theme in optical physics and engineering. Nanoscale materials display intriguing properties when they interact with light. Chemical sensing, materials research, biological monitoring and more can benefit.

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## Market Growing for Laser-Based Machine Vision Technologies

Laser-based machine vision can be a valuable tool for manufacturers looking to improve various areas of production: prototyping, assembly, inspection and the like. Experts from the international machine vision community consider how laser technologies impact the industry.

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## The Better to See You With

Breakthroughs in materials and fabrication techniques will bring military targets into view faster and from farther away. Sensor-laden systems for military use must fit exacting specifications if they will be carried by soldiers or by unmanned aerial vehicles. Advanced materials and manufacturing are making it possible.

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## 'Wheel Service' Relies on Imaging Technology

An image-based bar-code reader with a liquid lens module is part of a well-oiled system for keeping track of NASCAR wheels. The reader has a high-resolution sensor for scanning very small codes in a large field of view.

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## Problem-Based Learning Boosts Laser Safety Training

Even well-crafted laser safety courses tend to employ a passive lecture format. Problem-based learning stresses retention by getting students involved and preparing laser users and safety officers for real-life situations.

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## Metamaterials perform 'photonic calculus'

The discovery that metamaterials can be designed to perform 'photonic calculus' as lightwaves pass through them could give rebirth to analog computers. Computational metamaterials could almost instantly perform operations on the original wave, such as the light coming in through the lens of a camera, without conversion to electronic signals.

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## More News & Analysis



## Products from this Issue

### Compact High Speed Camera

AOS Technologies AG

The Q-MIZE is a compact, high-speed, high-resolution camera for use in harsh environmental conditions.

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### Low Light CMOS Camera

PHOTONIS USA, Inc.

The NOCTURN CMOS-based camera from PHOTONIS provides unmatched low-light digital imaging, with sensitivity of <4e- read noise in a full 100 fps SXGA (1280x1024) resolution.

**More info >>**

### Laser Speckle Reducer

Power Technology Inc.

The IQ7 laser speckle reducer from Power Technology Inc. reduces local interference and unwanted intensity patterns to improve laser imaging quality in machine vision applications.

**More info >>**

### Alumina Polishing Powders

Meller Optics Inc.

Meller Optics Inc. has introduced Microlux high-purity calcined alumina polishing powders that can be mixed with deionized water for grinding, lapping and finishing a variety of optics.

**More info >>**