

# This Week In PHOTONICS

PHOTONICS MEDIA



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## Top Stories

### Hyperspectral iPhone Camera to Monitor Health and Environment

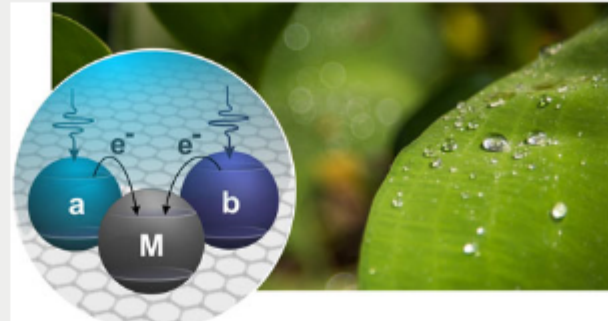
By turning an iPhone camera into a new kind of optical sensor, researchers at VTT Technical Research Center of Finland have created a low-cost hyperspectral mobile device. This will allow consumers to monitor their health, test food quality and verify product authenticity, all from their smartphone.



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### Quantum Photocell Could Boost Solar Cell Efficiency

A novel type of quantum heat engine photocell, which can help control the flow of energy in solar cells, could increase solar cell efficiency. The photocell has demonstrated the ability to regulate solar power conversion without requiring active feedback or adaptive control mechanisms. In contrast, conventional photovoltaic systems require voltage converters and feedback controllers to suppress fluctuations in solar power.



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### Fiber Optics Help Produce Single Photons

Information can be imprinted on single photons that can in turn, perform calculations and transmit messages. Creating the "individual" photon to do that is a complicated and challenging process though. With the help of fiber optics and fast optical switches, researchers at the University of Bath's Center for Photonics and Photonic Materials have developed a new way to improve the performance of single-photon sources.



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### Laser Coating Removal Robot for Aircraft

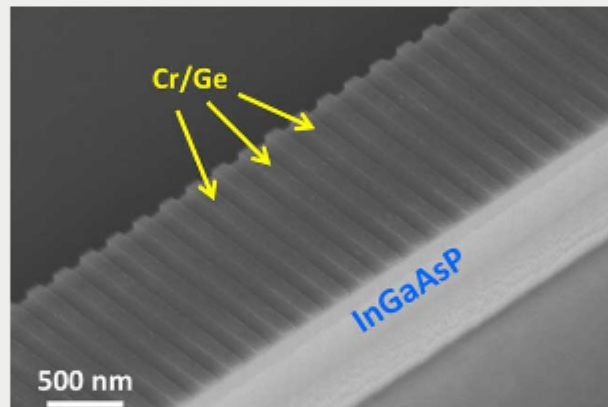
A robot equipped with a 20-kW CO<sub>2</sub> laser will soon be removing paint from commercial and military aircraft, both big and small. The Laser Coating Removal (LCR) robot from LR Systems BV will allow a faster and cleaner removal process than previous methods and lead to less time on the ground for the aircraft. Current stripping of aircraft is done with chemicals and manual sanding, which is time-consuming, unhealthy and costly, as aircraft need this done every six years. Using a laser cuts the turn-around time in half and reduces the CO<sub>2</sub> footprint by up to 65 percent.



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### Single Device Can Function as Both a Laser and Anti-Laser

An integrated device that demonstrates lasing and anti-lasing at the same frequency in a single cavity has been developed using parity-time symmetry. The lasing and anti-lasing resonances that were demonstrated share common resonant features such as identical frequency dependence, coherent in-phase response, and fine spectral resolution. Lasing and anti-lasing in a single device could offer a novel path for enabling light modulation with high contrast approaching the ultimate limit.



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### [High-speed Imaging All-rounder Triple Hit](#)

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Up until now small high-speed cameras compromised resolution, speed, sensitivity or image quality. The new pco.dimax cs camera series combines all of these desirable characteristics in a new compact camera design.

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### [2nd Generation Piezo Stages for SR Microscopy](#)

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### [Custom Precision Polymer Optics](#)

**Diverse Optics Inc.**

Diverse Optics manufactures custom, precision, polymer optics. Our core processes include injection molding, single point diamond turning (SPDT), opto-mechanical design, metrology, assembly, bonding, and thin-film coating.

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## Industry Expo

### SEMICON Japan 2016

December 14-16, 2016 - Tokyo Big Sight - Tokyo Japan

First held in 1977, SEMICON Japan has grown to become one of the largest international exhibitions of semiconductor equipment and materials, covering all products, technologies and services related to semiconductor manufacturing. It brings companies and their technologies together with customers and partners and provides a setting for technical seminars and meetings that actively support the growth of the global semiconductor industry. It is a comprehensive event that connects all the electronics supply chains, centering on semiconductor manufacturing.



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