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**Smartphones Set to Revolutionize the Medical World**

... but companies developing portable diagnostic devices for use in underserved settings must first consider a host of practical factors. The smartphone is an obvious choice for bringing diagnostic and other health care options to the developing world, rural areas and other underserved places. The technology offers the necessary computing power, storage and connectivity in a mobile technology that is already pervasive, even in regions that seem isolated. And the need is very real. For example, more than 70,000 operating rooms around the world do not have pulse oximeters.

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**STED Microscopy: A New Chapter in Light Imaging**

When Stefan Hell invented a technique that pushed beyond the diffraction limit of light for the first time, a new field of nanoscale imaging was born. Now laboratories around the world are using STED microscopy to smash through more boundaries in fundamental science. Looking back over two decades of progress, the man behind the revolutionary light imaging technique says he is very satisfied with how STED (stimulated emission depletion) microscopy has evolved our understanding of biomolecules as well as transformed the way we think about how light behaves.

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**CW Lasers Boost Resolution for Microscopy**

Since the first confocal microscope, lasers have been important illumination sources for cutting-edge microscopy techniques based on fluorescence. As these techniques have evolved, laser manufacturers have worked closely with microscope manufacturers and users to provide lasers whose output is well-matched to the specific needs. The latest trends involve optical nanoscopy and multiwavelength excitation. Thanks to optically pumped semiconductor laser technology, lasers ideally suited for these applications are now available.

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In this edition of the industry's premier weekly newscast: A European group is working to take the "fry" out of skyscrapers, sculpted light captures brain activity, and a bioimaging laser branches out to bomb detection. Hosted by Photonics Media's Laura Marshall and Melinda Rose.

**Bright Lights in the Bio(photonics)sphere**

A constellation of photonics superstars includes teens who are developing cancer-fighting tools, and another who is introducing students to STEM. As students around the world head back to school, let's take a moment to acknowledge some of the work being carried out by the under-20 crowd. The following three young people are among those who will likely help to shape the future of biophotonics and, in so doing, help shape all our futures.

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**Laser-Guided Codes Advance THz Imaging**

Unlike other regions of the electromagnetic spectrum, terahertz has proved extremely difficult to manipulate for capturing images of objects and materials in which these lightwaves interact. Most existing terahertz imaging devices use expensive technology or require several hours and cumbersome manual controls to generate a viable image, according to Willie J. Padilla, a physics professor at Boston College.

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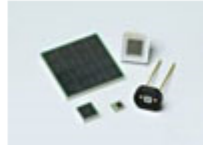
**Universal Diode Lasers**  
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 Omicron-Laserage Laserprodukte GmbH's BrixX ps series compact universal diode lasers can be pulsed in the picosecond range as well as operated in CW and modulated mode.  
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**Z-Axis Elevator Stage**  
 peizosystem jena GmbH  
 Made for adapting onto the top of standard X-Y microscopy stages, the PZ 300 AP Z-axis elevator stage from peizosystem jena has two parallel working piezo drives that allow the centrally located microscopy probe adapter to be lifted symmetrically.  
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**Piezo Linear Actuator**  
 PI (Physik Instrumente) L.P.  
 Physik Instrumente (PI) has added the P-604 to its PiezoMove family of motion-amplified, flexure-guided piezo linear actuators.  
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**Updated Multipixel Photon Counter Detectors**  
 Hamamatsu Photonics K.K.  
 Hamamatsu Photonics' updated multipixel photon counter (MPPC) detectors now offer greatly reduced dark count, reduced afterpulsing and crosstalk, increased photon-detection efficiency, and improvements in timing resolution and linearity.  
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**Industry Events**

**Neuroscience 2013** - November 9 - 13, 2013 · San Diego, CA

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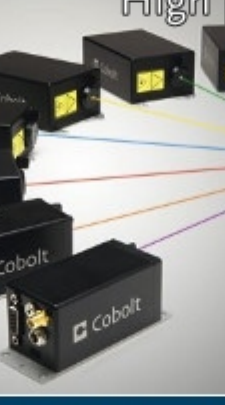
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