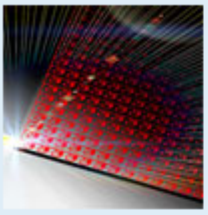




**4096-Emitter Phased Array Lets Chips Steer Light**



An array of 4096 optical antennas built on a silicon chip can steer light in arbitrary directions, holding promise for applications such as holographic televisions and medical imaging devices that move through tiny blood vessels. Although the concept of such "phased arrays" of antennas goes back more than a century for radio transmitters, scientists recently have been applying this model to optics. No two-dimensional tunable phased array had been built on a chip before, and the largest nontunable array to date had only 16 antennas, but scientists at MIT's Research Laboratory of Electronics developed a 64 x 64 grid on a single chip.

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**FEATURED VIDEO**



**OptiPro Systems - Behind the Scenes**  
Take a "behind the scenes" tour of OptiPro Systems, LLC. Discover how OptiPro has grown and evolved over its 30 year history and how OptiPro originally became a designer and builder of CNC machines for precision optics fabrication. Learn about OptiPro's engineers and technicians as well as the capabilities and solutions that can optimize your optical manufacturing processes.

**LightPath Reduces IR Manufacturing Costs 30%**

To support growth in its thermal imaging business, LightPath implemented several cost-reduction programs while simultaneously expanding the manufacturing capacity of its facility.

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**Light-Activated Hydrogel Repairs Cartilage**

When activated by light, a squishy biomaterial called a hydrogel could help repair damaged knee cartilage, tissue engineers at Johns Hopkins University reported.

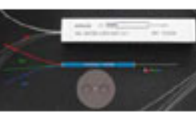



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**Mike Cumbo: IDEX Parting 'Amicable'**

Michael J. Cumbo, president of IDEX Corp.'s Optics & Photonics (IOP) platform, confirmed that he is leaving the company, but told Photonics.com that it is an "amicable parting."

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In this edition of the industry's premier weekly newscast: In this edition of the industry's premier weekly newscast: Mike Cumbo steps down as head of Optics and Photonics at IDEX, a laser "pill" boosts in-throat imaging, a phased array of thousands of emitters lets a chip steer light, and we visit Prism Awards finalist Princeton Instruments. Hosted by Photonics Media's Laura Marshall and Melinda Rose.

**Multijunction Solar Cell Design Could Exceed 50% Efficiency**

A lattice-matched, triple-junction solar cell proposed by an international team has the potential to break the 50 percent conversion efficiency mark, a goal in multijunction photovoltaic development.

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**Laser 'Pill' Boosts Esophagus Imaging**

Physicians may soon have an easy and painless way to screen the esophagus for precancerous cellular changes, thanks to a pill-sized device that provides detailed imaging of the upper gastrointestinal tract.

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**Jenoptik US Div. Awarded Marine Corps Contract**

Jenoptik CEO Dr. Michael Martin said the \$1.3 million development contract for laser range finder integrators is an important step in the internationalization of the company's Defense & Civil Systems div. and confirms that Jenoptik products "have gained considerable attention in the American military market."

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**How to Treat Heat Like Light**

A new technique developed at MIT makes it possible to manipulate heat as if it were light, an advance that could improve thermoelectric devices, create thermal diodes or achieve thermal cloaking.

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**Featured White Paper**



**Vision Library or Vision-Specific IDE: Which is right for you?**  
Matrox Imaging, Division of Matrox Electronic Systems Ltd.

Commercial machine vision software is currently classified along two lines: the conventional vision library and the vision-specific integrated development environment (IDE). Determining which software is right for your vision project depends upon a variety of factors: ease-of-use, productivity, flexibility, performance, completeness, and maintenance. This white paper uses these factors to contrast the two software development approaches and clearly establish the merits and drawbacks of each.

[DOWNLOAD WHITE PAPER >>](#)

**Play Light Masters and you could win a Google Nexus 7 tablet!**

- Are you good at guessing company logos?
- Current on industry news and events?

Are you the next Light Master? There's only one way to find out! Play Light Masters at the Photonics Media booth at both BIOS (booth 8600) and Photonics West (booths 600 & 601) AND be entered into a random drawing for a Google Nexus 7 tablet!

Drawings will be held at 3 p.m. on Sunday (2/3/13), Tuesday (2/5/13), Wednesday (2/6/13) and Thursday (2/7/13).

Pick up a copy of the current issues of *Photonics Spectra*, *BioPhotonics* and *EuroPhotonics*. Fill out a subscription form and pick up a small token of our appreciation.

**Scan your badge and enter to win a \$300 gift card from Amazon!**

**Industry Events**

**Automate 2013** - January 21 - 24, 2013 - Chicago, IL  
Visit us at booth 127



Automate — formerly the International Robots, Vision & Motion Control Show — is the largest solutions-based showcase of automation technologies in North America. The biennial event demonstrates the latest robotics, vision, motion control and automation technologies and solutions for a broad array of industries. The 2013 event features four full days of classes taught by experienced industry professionals, Certified Vision Professional (CVP) basic and advanced certification opportunities, and keynote presentations on the impact of robotics on economic growth and navigating the new political climate for business growth and success.

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**Photonics West 2013** - February 2 - 7, 2013 - San Francisco, CA  
Visit us at BIOS Booth 8600 and Photonics West Booths 600 & 601



Photonics West 2013, to be held at the Moscone Center, will feature more than 4450 technical presentations, 18 plenary talks, 40 technical events and 70 continuing education accreditation short courses. The technical conferences - up about 5 percent over last year - are organized around four symposia: BIOS (Biomedical Optics), LASE (Lasers and Applications in Science and Engineering), OPTO (Integrated Optoelectronic Devices) and MOEMS-MEMS (Micro- and Nanofabrication). A virtual symposium on Green Photonics also will be held. The trade show and conference kicks off with BIOS, where the latest optical and photonic technologies used in diagnostics, therapeutics, and imaging are presented and discussed.

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