

Highlights from the **January 2013** issue of Photonics Spectra



Photonics Strengthens Defense - and Offense

Light-based technologies offer the military significant advantages in sensing, communications and even weaponry. The US Army has touted its ownership of the night - and the implied advantage therein. But times have changed. "Nowadays, that's not so much so because there's a vast proliferation of night-vision technologies throughout the world," said Gregory J. Quarles, chairman of the public policy committee of The Optical Society. The 2012 report *Harnessing Light for America's Technological Future* from the National Research Council outlines tomorrow's military needs, noting that photonics and optics could play key roles in sensing, communications and weapons. These areas provide a guide for the intersection of photonics and defense over the next decade.

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Beyond Recycling: Using Photonics to Save the Planet

Historically, the environment has paid a heavy price whenever innovation or technological advances have taken place. But times are changing, and today, modernization seldom occurs without the environment being considered. The public's consciousness of the importance of preserving our planet plays an ever-greater role in forging the direction of photonics innovation - and, conversely, photonics is having a huge impact on the environment.

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Photonic Techniques Spark Manufacturing Revolution

The symbiosis of manufacturing and photonics is set to change our lives very soon with advances such as 3-D printers and EUV optical lithography. Next-generation photonics requires advances in manufacturing, just as next-generation manufacturing requires advances in photonics.

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Doing the Math: Aging World Population Demands Photonics Innovation

An aging world population may be the single biggest social challenge of this century - and photonic technologies and innovation could play a major role in helping us all make the most of this global trend. On the occasion of World Health Day 2012, the World Health Organization called the current wave of population aging one of the biggest social transformations: It will result in a world with not only more older people than children, but also with more very old people than ever before.

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Advanced Light Cure Adhesive

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Breakthroughs in adhesive technology enable light curing adhesives to cure under a visible light wavelength of 405 nanometers. Learn how these environmentally friendly adhesives can improve worker safety and lower production costs while offering a range of desirable engineering properties ideal for many applications.

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Smartphones Move from Social Media to Social Medicine

Cellphones have evolved from a luxury to a necessity in the past 20 years, and now smartphones are making those same inroads. With the added versatility and "brain power" supplied by these enhanced phones, as well as their superior imaging capabilities and bright, efficient light sources, their use in the field of medicine, perhaps more than any other application, has the power to improve our day-to-day existence.

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Photonics Industry Undaunted by Uncertainty

Despite lingering economic concerns, the photonics community is looking ahead to a brighter future - even if it means more work in the short term.

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Prism Awards Finalists Offer Solutions to Big Problems

Sensors for monitoring environmental toxins and detecting explosives, powerful new lasers for biophotonics, and tools for lithography and spectroscopy are among the finalists for the 2013 Prism Awards for Photonics Innovation, the global competition sponsored by Photonics Media, publisher of *Photonics Spectra*, and SPIE.

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PROMOTION

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Stop by the Photonics Media booths (600 & 601) at Photonics West between 10 a.m. and 2 p.m. on Tuesday, February 5, and give us your answer. You could appear on an upcoming edition of *Light Matters Weekly* Newscast at Photonics.com, the industry's original weekly newscast. We'll give you your very own *Light Matters* T-shirt for participating.

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