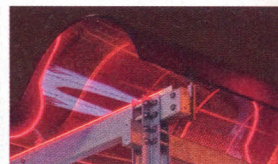




## What's on the Horizon?

Our Annual Trends Issue





## NEWS & ANALYSIS 16 | TECH NEWS

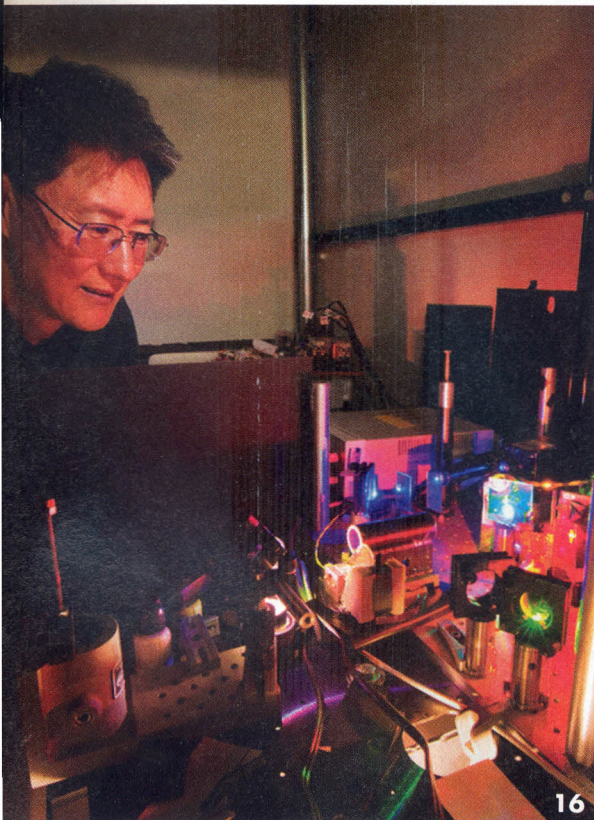
Photonics Spectra editors curate the most significant photonics research and technology headlines of the month – and take you deeper inside the news. Featured stories include:

- Zinc oxide microwires boost LED performance
- Spin lasers could push data into the fast lane
- Chemically assembled metamaterials pave way for superlenses

## 34 | FASTTRACK Business and Markets

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Tokyo gears up for Photonix Expo

## 55 | GREENLIGHT by Marie Freebody, Contributing Editor Sensor Reveals 1000 Colors Across Land, Sea, Space



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To seek out the soft glow of new life and new civilizations

## THE COVER

The cover of the 2012 trends issue was designed by Juliana Willey.





FEATURES

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by Laura S. Marshall, Managing Editor

Leading lights of the photonics industry share their perspectives on the market's current and future health.

**68 | MASS-MARKET IMAGING SYSTEMS CUT TIME, COST, SIZE**

by Marie Freebody, Contributing Editor

Liquid lenses, 3-D mapping and ever-smaller cameras are helping bring to fruition applications such as stretchable optoelectronics and robots that guide the blind.

**78 | PUTTING MORE THAN GLASS IN THE TOOLBOX**

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Alternative optical materials such as polymers and metamaterials have increased in quality, enabling systems that can do more in a smaller space.

**86 | MEDICAL MARKETS AND NEW NICHE DRIVE LASER ADVANCES**

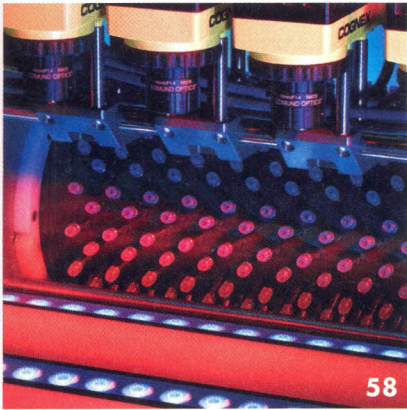
by Lynn Savage, Features Editor

The health of laser manufacturing is fairly robust, thanks in large part to novel applications in surgery and biomedical research.

**94 | A BRAVE NEW WORLD OF PHOTONICS**

by Gary Boas, Contributing Editor

Photonics experts predict which visionary applications in the automobile, solar, defense and lighting industries could become a reality in 20 to 50 years.



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