

NEWS & ANALYSIS 20 | TECH NEWS

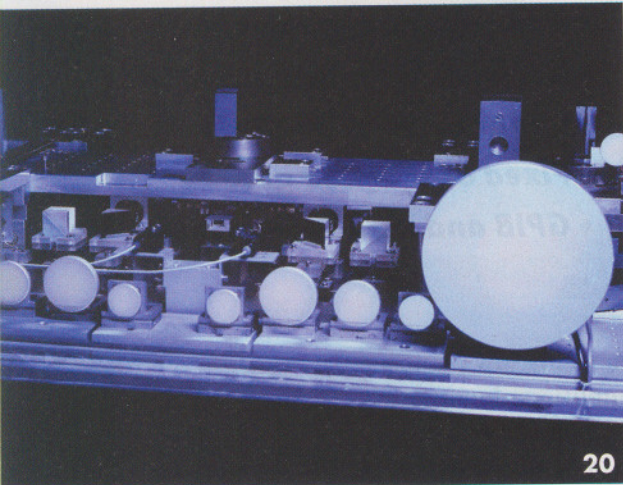
Photonics Spectra editors curate the most significant photonics research and technology headlines of the month – and take you deeper inside the news. Featured stories include:

- Single nanomaterial yields a laser rainbow
- Coupled lasers cancel each other out
- Solar cell-like implant stimulates optic nerve

34 | FASTTRACK • Business and Markets

- Software gives photonics designers more power
- LME 2012 expands educational offerings

41 | GREENLIGHT LED-like solar cell absorbs, emits light



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COLUMNS 10 | EDITORIAL

12 | LETTERS

82 | PEREGRINATIONS Uncooled IR camera reveals mysteries of space

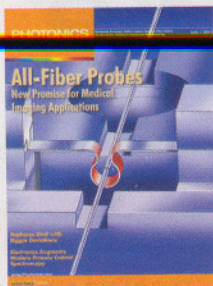


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DEPARTMENTS 70 | BRIGHT IDEAS 79 | HAPPENINGS 81 | ADVERTISER INDEX

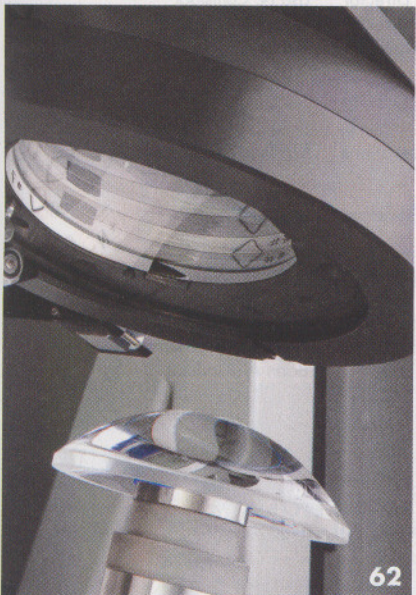
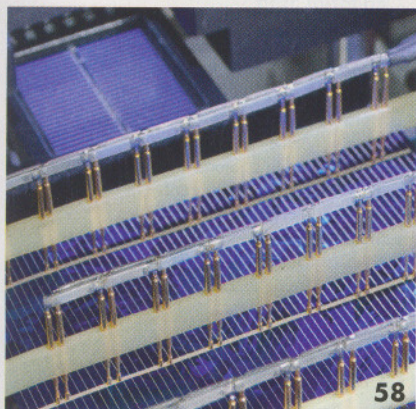
THE COVER

Jean-Michel Delaport and Dr. Peili Wang of Vytran LLC discuss optical fiber probes for medical imaging applications, beginning on p. 42. A schematic of the filament fusion process is illustrated. Design by Senior Art Director Lisa N. Comstock.



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FEATURES

**42 | ALL-FIBER PROBES HOLD PROMISE FOR MEDICAL IMAGING APPLICATIONS**

by Jean-Michel Pelaprat and Dr. Baishi Wang, Vytran LLC

Designs made possible by filament fusion technology have found applications in medical imaging such as 1- and 2-D optical coherence tomography.

46 | NANOSCALE BIOMATERIALS REQUIRE CLOSE OBSERVATION

by Lynn Savage, Features Editor

Deep-imaging microscopy could advance the use of polyurethane-based "nanohybrids" in replacement bones and blood vessels.

52 | DPSS LASERS GIVE MEDICAL DEVICE MANUFACTURING AN EDGE

by Jim Bovatsek, Jürgen Niederhofer and Dr. Rajesh S. Patel, Spectra-Physics

As medical devices continue to shrink, these solid-state lasers offer a versatile alternative to CO₂ and excimer.

55 | BEAM PROFILING HELPS MAKE MEDICAL DEVICES BETTER

by John McCauley, Ophir-Spiricon

The range of information provided by laser measurement products ensures the consistency and precision of the machine or process.

58 | ELECTRONICS AUGMENTS MODERN PROCESS CONTROL SPECTROSCOPY

by Gert Noll, Tec5USA Inc., and Mathias Holzapfel, Tec5 AG

In process control, the detector array and readout electronics are key; ideally, these are combined with a large signal-to-noise ratio and high dynamic range.

62 | ASPHERES DEAL WITH BIGGER DEVIATIONS

by Hank Hogan, Contributing Editor

As aspheres with deviations up to 800 μm have become common and manufacturing runs have become smaller, metrology tools and techniques have evolved to keep up.

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