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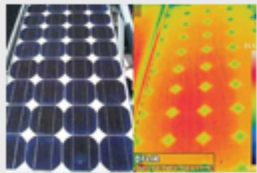
THE PULSE OF THE INDUSTRY



Volume 48 · Issue 3 · HIGHLIGHTS

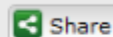
March 2014

Manufacturers Refocus Technology Efforts Following Recent Financial Woes



Sunnier skies are on the horizon for solar, and companies are once again seeking breakthroughs in technology. Much of the photovoltaic manufacturing sector saw profitless prosperity the past two years, but for the last two quarters of 2013, manufacturers finally began to see a return to profitability – and 2014 heralds the most profitable year for manufacturers since 2010.

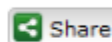
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SFG Spectroscopy Is Key to Oil Industry Research

This nonlinear laser technique can examine the molecular-level interaction of oil and metal surfaces. Laser spectroscopy enables the minute determination of molecular structure for a variety of applications ranging from biomedicine to materials science and space exploration. The Infrared Laser Spectroscopy Group in the chemistry department at the University of Cambridge uses several laser-based methods to study molecules in a wide range of situations.

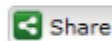
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Materials Evolving for Lighter, Stiffer Optics

Components with greater rigidity but less weight could advance high-energy lasers, consumer products and metamaterials. For optical materials, less can be more: Coatings that reflect less could lead to displays that are brighter and can be seen over a wider angle. Materials that expand or contract less as the temperature fluctuates could lead to better optics. Equally important could be lightweight materials that move less.

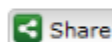
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New Approaches Improve Beam Expansion

New designs for afocal beam expansion systems optimize wavefront quality. Everyday work in an optics laboratory would be unthinkable without beam expansion systems, which optimally adjust beam cross sections between the light sources (e.g., lasers) and the subsequent optical elements.

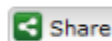
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InGaAs SWIR Cameras Open New Opportunities

Shortwave infrared imaging is finding new applications by improving spectroscopy, inspection and more. A whole new waveband of the electromagnetic spectrum has been opened up for exploitation in the past few years – the shortwave infrared (SWIR), which ranges from the edge of the near-IR region at 900 nm up to 1700 nm and has traditionally been invisible to all detectors.

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Products from this Issue



X15 Fiber Laser

NKT Photonics A/S
NKT Photonics has released the Koheras Basik X15 ultralow-noise fiber laser for industrial applications such as seismic mapping for oil and gas, pipeline monitoring and security.

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HeCd Replacement Laser

Power Technology, Inc.
Power Technology Inc. has developed the Concerto, a 442-nm solid-state HeCd replacement laser that delivers up to 150 mW of actively stabilized single-frequency light with a spectral bandwidth <5 MHz.

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Optical Mirrors

Newport Corp.
Newport Corp. has released ValuMax research-grade optical mirrors for general laboratory use, prototype development, and proof-of-concept or educational applications.

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Sapphire Optical Domes

Meller Optics, Inc.
Meller Optics Inc. has introduced sapphire optical domes for protecting guidance systems, sensors and other devices in harsh airborne and subsea environments.

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