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# PHOTONICS spectra

PHOTONICS MEDIA

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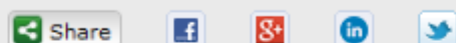
June 2015

### Materials Innovations Help LEDs Turn On



Innovations in substrates and phosphors are cutting costs, improving LEDs' performance and driving them into new applications. Novel materials are powering the push of LEDs into new areas. For instance, according to Yole Développement, the market for ultraviolet LEDs will grow from \$90 million in 2014 to more than \$500 million and potentially much higher by 2019.

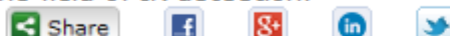
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### Layer Structure Enhances Light Absorption

Layering thin films such as amorphous silicon and microcrystalline silicon enhances the conversion efficiency of solar cells. A double absorbing layer based on amorphous silicon thin film is promising for solar cells because it considerably enhances the utilization of sunlight. Other potential applications can be found in the field of IR detection.

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### Applied Robotics: How Robots Are Changing Our World



From the living room to the auto plant to Mars, and from helping the handicapped to providing internet connectivity in remote areas, robots are everywhere and doing it all. The robot age is upon us. The thought of robots might bring to mind helpful androids like C-3PO in "Star Wars" or Rosie from "The Jetsons" – or it might stir up concern for humankind as advanced robots become more and more indispensable and take over dangerous or boring tasks.

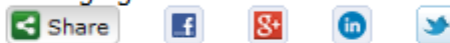
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### Quantum Cascade Lasers: Where They Are and Where They're Going

QCLs are carving a clearer niche in photonics applications, namely in defense and security, medical diagnostics, atmospheric gas sensing and mid-IR imaging.

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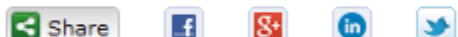


### Considerations When Buying Flat Optics



To simplify the process when purchasing flat optics, we will discuss the top six factors from a manufacturer's perspective, all of which affect the three major areas of the purchasing decision: quality, delivery and cost.

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### Featured Products



#### Laser Debris Shields

United Lens Company, Inc.  
As we approach our 100th Anniversary as a leader in the Custom Optics Industry, we at ULC continue our legacy of responding to our customers' needs by introducing Debris Shields for high energy laser applications.

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#### Production Lens Testing

Optikos Corporation  
The LensCheck™ instrument is a cost-effective solution for your production and prototype lens qualification needs.

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#### Fiber Laser Cavities

OFS Specialty Photonics  
OFS has been developing and manufacturing high power components and modules since the early years of fiber lasers.

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#### Single-Crystal Supermirrors

Crystalline Mirror Solutions  
Crystalline coatings are redefining the standards of precision laser optics.

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#### Low-Cosmetic Defect IR Filters

Spectrogon US, Inc.  
Spectrogon manufactures infrared filters and windows with high transmission, high rejection outside the passband, and introducing low cosmetic defects.

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#### Research Radiometer

International Light Technologies  
ILT has been manufacturing light measurement equipment for 50 years.

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#### Mid-IR Optical Isolators

Electro-Optics Technology, Inc.  
Our 2-µm optical isolators are designed for use with thulium and holmium lasers in the 1900- to 2100-nm region.

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#### SWIR Cameras

Raptor Photonics Ltd.  
The Ninox 640 from Raptor Photonics enables high-speed visible and shortwave infrared imaging.

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#### Ultra-Narrow UV Filters

Alluxa  
Alluxa's Ultra Series of high performance filters now includes our Ultra-Narrow UV Filters.

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#### Scan System

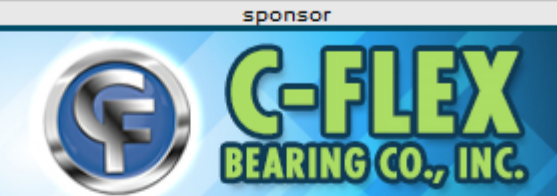
Scanlab AG  
With a 20-mm aperture, the IntelliSCAN III 20 scan system from Scanlab AG delivers a wide range of options and efficient digital-servo algorithms with application- and customer-specific tunings.

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Test drive the **LensCheck™** system for production and prototype lens testing.



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A flexure based bearing, utilizing internal flat crossed springs, capsuled in a cylindrical housing.

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- [Photomultiplier Tube Detectors](#)



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**FAFL**

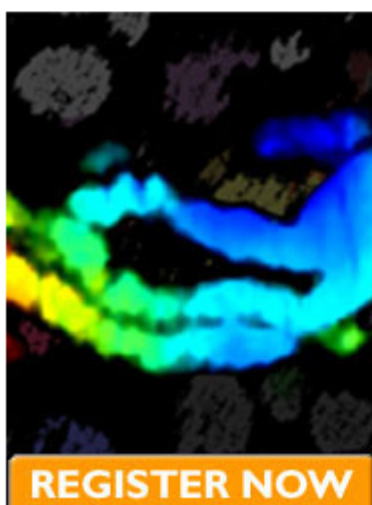
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### WEBINAR

## Self-Assembled Porphyrin Nanoparticles for Biophotonic Imaging and Light-Controlled Drug Delivery

Thu, Jun 18, 2015 1:00 PM - 2:00 PM EDT

FREE WEBINAR



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Jonathan Lovell

This talk will address two recently reported nanoscale systems, both involving high-density porphyrin constructs. First, porphyrin nanovesicles have been developed that can release drugs in response to near-infrared (NIR) laser irradiation, leading to enhanced drug deposition in irradiated tumors. Second, a family of highly light-absorbing nanoparticles have been developed for safe and real-time gastrointestinal photoacoustic imaging following oral administration to mice.

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