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Wednesday, April 10, 2019

PHOTONICS spectra

Monthly newsletter from the editors of Photonics Spectra, with features, popular topics, new products, and what's coming in the next issue.
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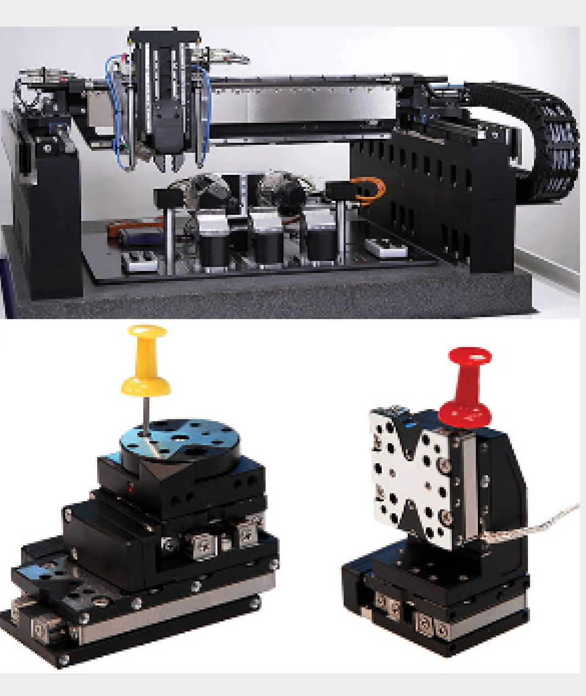
Positioning Technology Gets Smart



Over the span of 40 years, the field of precision positioning has vaulted forward in deeply beneficial ways. Submicron-resolution linear encoders, for example, once available only in the costliest stages, are now affordably integrated into mechanisms as large as gantries and as small as matchbook-sized nanopositioners. New motor concepts abound, ranging from the familiar DC servo, stepper, and linear motors to novel technologies such as high-speed, ultrastable resonant piezo motors and diminutive stick-slip stages with nanoscale positionability over many millimeters of travel.

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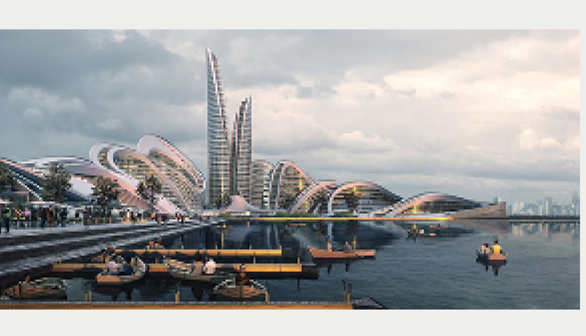
Smart Structures on the Rise



Futuristic smart cities are having their day, with numerous announcements in the past year of plans to begin developing high-tech urban endeavors all over the globe. Developers have revealed ambitious plans for smart cities in the U.S., Canada, Europe, Russia, India, Africa, and the Middle East, partly as a solution to overcrowding in rapidly growing urban centers. The definition of a smart city is somewhat ambiguous, but the main thrust of these cutting-edge municipalities is integration of the most advanced intelligent systems, data collection technologies, and information analysis methods into appealing, human-centric civic centers that usher in the progressing Fourth Industrial Revolution, the Internet of Things.

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Imaging in the Blink of an Eye

CMOS cameras and sensors are getting faster. That's good news for researchers and for the autonomous vehicles market, among others. For researchers, faster imaging enhances spectroscopy, improves resolution, and makes it easier to capture rapidly decaying fluorescence. For self-driving vehicles, speedier imaging makes distance determination more accurate. But high-speed imaging — sometimes taking only nanoseconds — produces more data, which presents challenges when moving, storing, and analyzing information. Fortunately, interface advancements and new imaging techniques are easing these challenges. And added imaging intelligence is on the horizon, which is expected to ease the data burden further.

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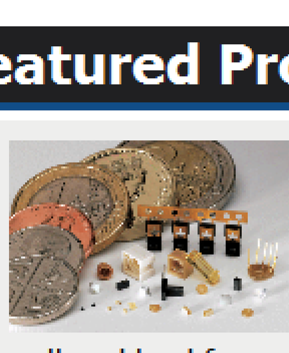
Featured Products



Micro Injection Molding

Accumold
Accumold® is a high-tech manufacturer of precision micro, small and lead frame injection molded plastic components. Utilizing processes developed from Accumold's Micro-Mold® technology, the company designs, builds and produces unique molds and parts efficiently for markets that include Micro Electronics, Medical, Micro Optics, Automotive, and Military Applications.

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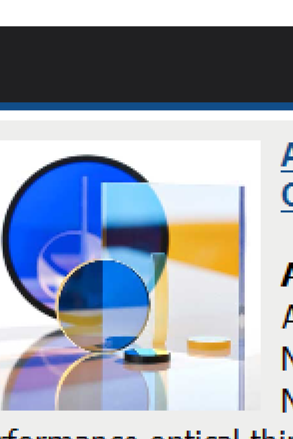

Alluxa Ultra Series Filters and Coatings

Alluxa
Alluxa Ultra Series Filters, including Narrowband, Dichroic, UV, IR, and Notch filters, provide the highest performance optical thin film solutions available today. For example, the Ultra Series Flat Top Narrowband filters offer the narrowest bandwidths and squarest filter profiles in the industry.

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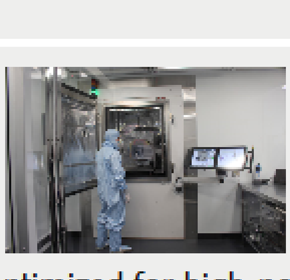

SYNOPTICS Now Offers IBS Coatings

Northrop Grumman Synoptics
Quasi-Rugate thin film designs are optimized for high-power laser applications for ultra-fast through CW applications across the wavelength range of 355 nm to 2200 nm. Each design has a unique refractive index profile specifically tuned to give optimal performance for our customer's applications.

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Mini Positioning Stages

PI (Physik Instrumente) LP, Air Bearings and Piezo Precision Motion
PI has engineered a compact motorized linear stage that combines high accuracy with affordability. A large variety of drive and configuration options is offered, from open loop stepper motors with lead screws to fast, servo motor driven units with linear encoders and low-friction ball-screws.

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Norland Optical Splice - Easy To Use!

Norland Products Inc.
The Norland UVC Optical Splice is the first really easy to use, high performance connection for optical fibers. This splice incorporates a precision TRW glass alignment guide and a proactive glass sleeve in a unique one piece design that minimizes handling of bare fiber.

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919P Series IR Thermal Detectors

Newport Corporation
The Newport 919P Thermopile Detector Series provides a full range of sensors to meet the power measurement needs for CW or pulsed lasers up to 10.6 um wavelength. They offer broadband, spectrally flat response, with the maximum power range up to 5000 Watts. These sensors are compatible with Newport 843-R series, 1919-R, 843-R-USB, and 1936-R/2936-R power meters.

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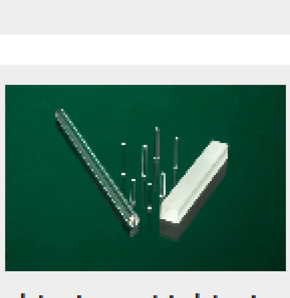

Light Pipes and Homogenizers

IRD Glass
IRD Glass specializes in high precision light homogenizers and light pipes. Light pipes and homogenizers are designed to smooth out the irregularities inherent in a raw non-uniform beam of light to create a more uniform and evenly distributed beam of output energy.

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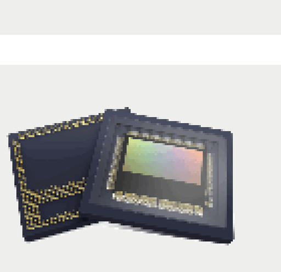

Lince 11M Sensor for High-speed Applications

Teledyne e2v (UK) Ltd.
Teledyne e2v announces the expansion of its Lince family of image sensors with a new 11Megapixel detector. Lince11M is a new CMOS image sensor designed for applications that require 4K resolution at very high shutter speed. This standard sensor uniquely combines 4K resolution at 710 fps in APS-C format.

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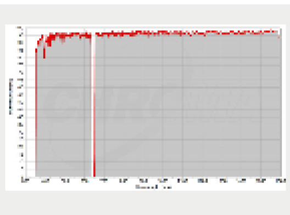

Highest Performing Notch Filter

Chroma Technology Corp.
Chroma Technology introduces the TopNotch™ line of narrow band, notch rejection filters. Offering best-in-class performance with transmission from 350-1600 nm and rejection FWHM of 3% of center wavelength. With a blocking range of at least 6 nm >OD6...

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TracePro

Optics and Illumination Software

Lambda Research Corp.
TracePro combines a graphical user interface with solid modeling, Monte Carlo ray tracing, analysis features, CAD import/export, optimization methods, and a complete and robust macro language to solve a wide variety of problems in illumination design and optical analysis.

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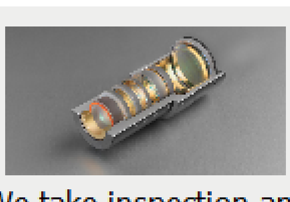

Customized Optical Systems & Assemblies

FISBA AG
We take inspection and automation requirements and turn them into photonics system solutions. Our optical systems and assemblies enable industrial production applications like 2D/3D scanning, semiconductor process control, display technologies, and process monitoring.

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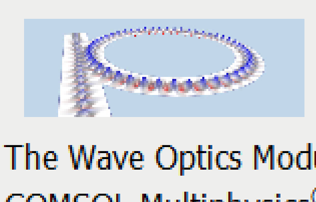

Wave Optics Module

COMSOL Inc.
The Wave Optics Module is an add-on product to the COMSOL Multiphysics® simulation software platform. You can use the Wave Optics Module to efficiently model and optimize optical systems and photonic devices. Typically, simulating geometrically large wave optics problems is both time consuming and computationally demanding.

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In Case You Missed It

Chalcogenide Aspherical Lenses in IR Imaging

As the thermal imaging market continues to rapidly expand, a broad array of commercial applications has placed an increased emphasis on balancing cost and performance.

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Strain Engineering Produces Highly Stable Light From Individual QDs

New research suggests that asymmetrically strained colloidal quantum dots (QDs) can provide stable, blink-free light emission comparable to the light produced by QDs made through more complex processes. The strained QDs were found to emit spectrally narrow light with a highly stable intensity and a nonfluctuating emission energy.

Read Article

ARL Explores Benefits of Immersive Technology for Soldiers

Researchers at the U.S. Army Research Laboratory (ARL), in collaboration with the University of Minnesota and the U.S. Army's Institute for Creative Technologies (ICT), have investigated methods for assessing the usefulness of virtual and augmented reality (VR and AR) systems for soldiers.

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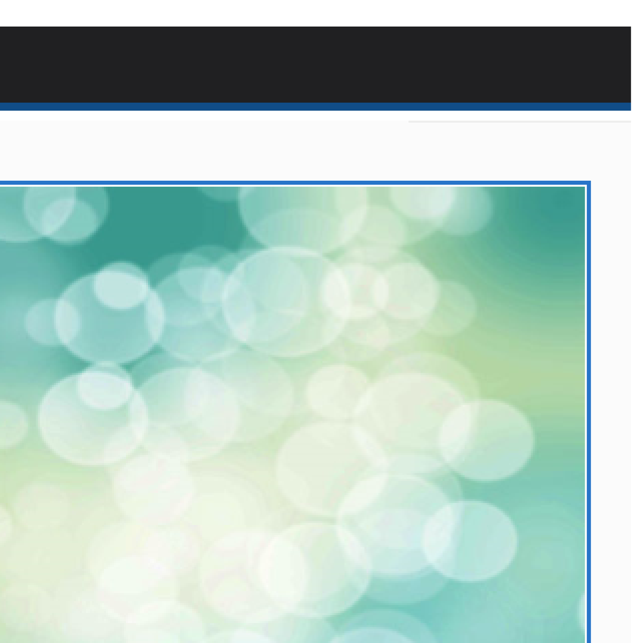
Webinars

Quantum Dots Are Making Displays Brighter and Photomedicine Better



Tue, Apr 23, 2019 1:00P EDT
In this webinar you will learn about the properties that make quantum dots (QDs) so desirable in displays, and the types of QD technologies that are most suitable for displays. It will cover strategies for implementing QDs in displays, challenges facing this technology, and QD-enabled displays in the future. In addition to displays, the use of electroluminescent (EL)-QD devices in photomedicine will also be discussed. This webinar is sponsored by Radiant Vision Systems.

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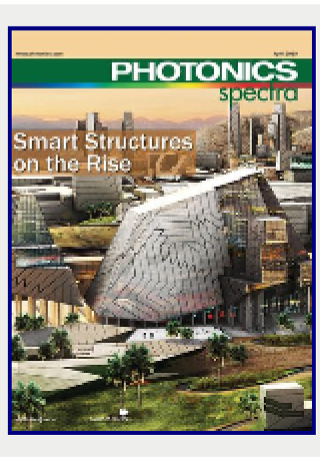
Coming in May...

Features
Lasers in Cinema, AR/VR, Raman Spectroscopy

Photonics Media is currently seeking technical feature articles on a variety of topics for publication in our magazine *Photonics Spectra*. Please submit an informal 100-word abstract to Susan Petrie, Senior Editor, at Susan.Petrie@Photonics.com, or use our online submission form www.photonics.com/submitfeature.aspx.

About *Photonics Spectra*



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