

PHOTONICS spectra



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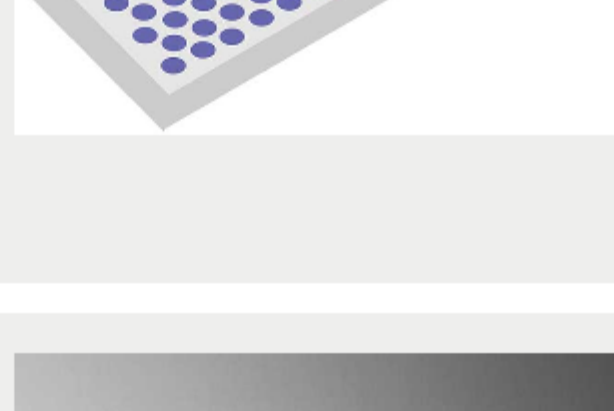
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STABILIZING THE LINE OF SIGHT

By Peter J. Kennedy and Rhonda L. Kennedy
A methodology and an example for executing a successful end-to-end line-of-sight pointing design.

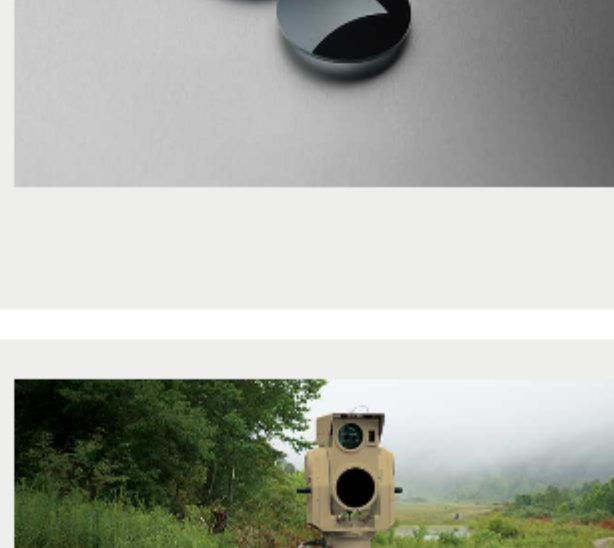
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All-Optical Logic Gates Show Promise for Optical Computing
When it comes to computing, one of the primary bottlenecks in increasing data transfer rates is the conversion time required from optics to electronics when the signal reaches a semiconductor microprocessor. One approach to addressing this problem would be converting systems to ones that are based on optics, with optical microprocessors in place of semiconductor microprocessors. Achieving this feat would lead to an era of all-optical information processing.



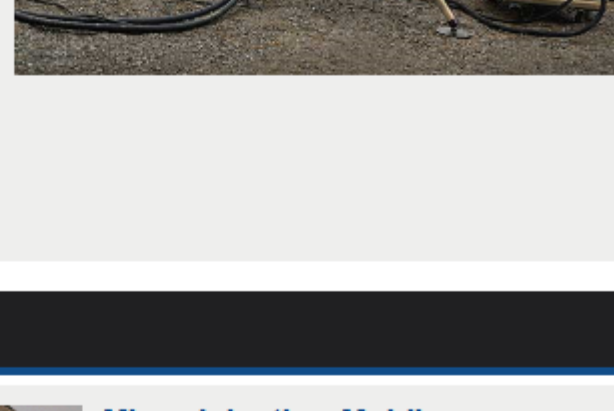
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Germanium Alternative Gaining Momentum for IR Optics
When it comes to designing IR imaging systems, manufacturers have traditionally worked with crystalline materials such as germanium. To make compact, lightweight systems, fabricators are driven to use aspheric surfaces, which has meant diamond turning. Chalcogenide glass has emerged as another material option for IR optical elements. Not only does it boast excellent performance, but more importantly, it can be fabricated using scalable precision glass-molding methods.



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Lasers Adapt to Changing Threat Landscape
Speed-of-light engagements with limited collateral damage make laser weapon systems a highly precise and scalable option in modern warfare. Lasers offer a low-cost-per-shot solution to high-volume threats posed by drones and also offer the deep magazine capability to address multiple targets with reduced logistics tails. For many years, lasers have been used in a variety of defense applications, from determining target ranges, to precisely delivering munitions, to confusing or jamming optical trackers, and as weapons to dazzle personnel or destroy targets.



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Featured Products

Diffraction Grating Solutions
Optometrics Corporation
Diffraction efficiency and dynamic range are critical parameters in many spectrometric instrument designs. Understanding why a particular reflective or transmission diffraction grating may have small yet necessary performance differentiation for instrument optimization success can be critical.

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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.

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Femtosecond Laser Protection
Kentek Corporation
There are few reliable and appropriately tested filters available today for laser eye protection for femtosecond laser safety. Kentek's coated mineral glass filters are among the exceptional products chosen repeatedly by the most demanding laser users for their challenging applications. The Kentek products are built for maximum laser safety.

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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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Broadband Fiber Optic Components and Modules
Gould Fiber Optics
Three Decades of Innovative Components for Fiber Optics.. Gould Fiber Optics, a leading manufacturer of passive fiber optic products, with over 30 years of proven reliability as a leader in the research, development and manufacturing of fiber optic components and integrated assembly solutions has expanded its component lines.

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Active-locking SLM Lasers - torus
Laser Quantum Ltd.
For Raman spectroscopy, holography and Brillouin scattering applications, Laser Quantum has designed the torus 532 and 660 nm lasers. The torus family of single longitudinal mode lasers features a power range of 50 to 750 mW. The family also features TruLoQ™ active mode-locking technology to stabilise the laser...

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Next Generation of Trilinear Line-Scan Cameras
Teledyne e2v (UK) Ltd.
Teledyne e2v announces its next generation of line-scan cameras - the high-resolution ELiXA+ trilinear color range. These new 8k pixel cameras are ideal for industrial applications that require high color resolution and image sharpness such as print, label, textile, electronic and PCB inspection.

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MPX Encircled Flux Meter
Arden Photonics Ltd.
The MPX Modal Explorer provides real-time measurement of Encircled Flux. Simply connect your source and patchcord to the MPX, and it will measure their Modal Launch Conditions in real-time. Encircled Flux is now widely accepted as the preferred way to specify modal filling by IEEE, TIA and IEC.

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IR Filters for Thermal Imaging and Gas Detection
Spectrogon US
Spectrogon manufactures infrared filters and windows with high transmission, high rejection outside the passband, and introducing low cosmetic defects --- for thermal imaging applications such as cryogenically cooled IR detectors and for uncooled microbolometers.

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Aries Spectroradiometer
Gooch & Housego Orlando
The Aries spectroradiometer is the next generation optical measurement instrumentation focused on providing higher reliability and greater measurement throughput. Based on the industry standard OL 770 optical core, the Aries utilizes state-of-the-art on-board signal processing and a new powerful software suite...

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Superresolution Microscopy Poster
Photonics Media
With interest in the superresolution microscopy field growing rapidly, the editors of BioPhotonics magazine -- in collaboration with acknowledged experts -- created a poster with readers in mind that is suitable for lab, classroom and office. It features visually stunning, high-resolution images that reveal never-before-seen worlds at the sub-cellular level.

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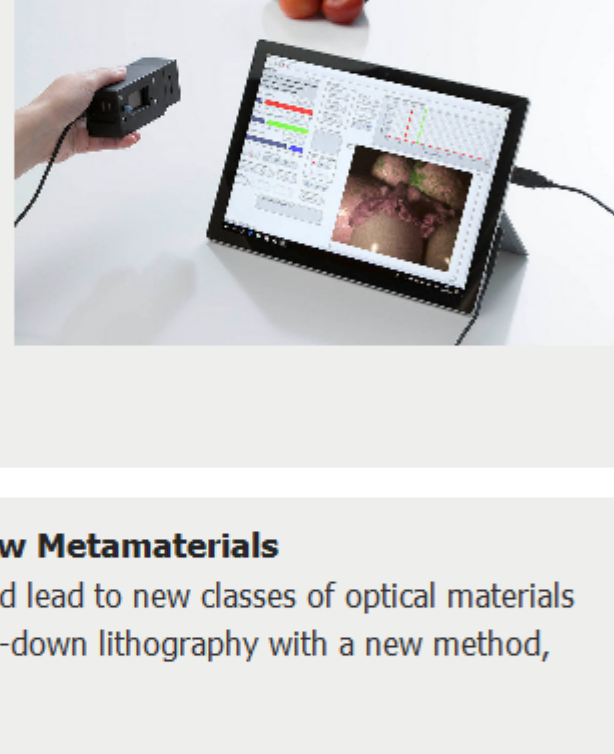
Precision Molded Glass Optics
FISBA LLC
Infrared optics are essential for many defense and security applications such as low light imaging, thermal imaging, IR sensing, and more. FISBA's North American production facility in Tucson, Arizona, specializes in high precision components in the SWIR, MWIR and LWIR, including aspheric and diffractive optics molded from chalcogenide glass.

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In Case You Missed It

VNIR HSI Technology Can be Integrated With Consumer Devices
A cost-efficient hyperspectral imaging (HSI) technology has been developed that could enable new artificial intelligence (AI) applications to be introduced into mobile devices, allowing for potential use in smart home systems.

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Lithography, DNA Used to Build Structures That Could Lead to New Metamaterials
Researchers have developed a technique for creating optical structures that could lead to new classes of optical materials and devices. Their technology combines the traditional fabrication method of top-down lithography with a new method, programmable self-assembly driven by DNA.

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Ultrafast Measurement Technique Shows How Laser Pulses Begin
Researchers have demonstrated how laser pulses emerge from noise, then collapse and oscillate before stabilizing. The discovery was made possible by real-time measurement of the laser's temporal intensity with subpicosecond resolution and the laser's optical structure with subnanometer resolution.

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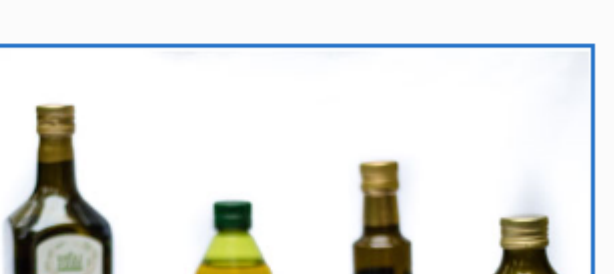
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Featured Video

PCO-Tech Inc.
PCO-Tech Inc. introduces their newest line of sCMOS cameras - the pco.panda 4.2 and the pco.panda 4.2 back illuminated (bi) camera. Both cameras provide high quantum efficiency with low dark current noise in an ultra-compact body. The addition of the USB 3.1 interface enables a new generation of cameras with ultra-speed data transfer and direct power via the USB cable.

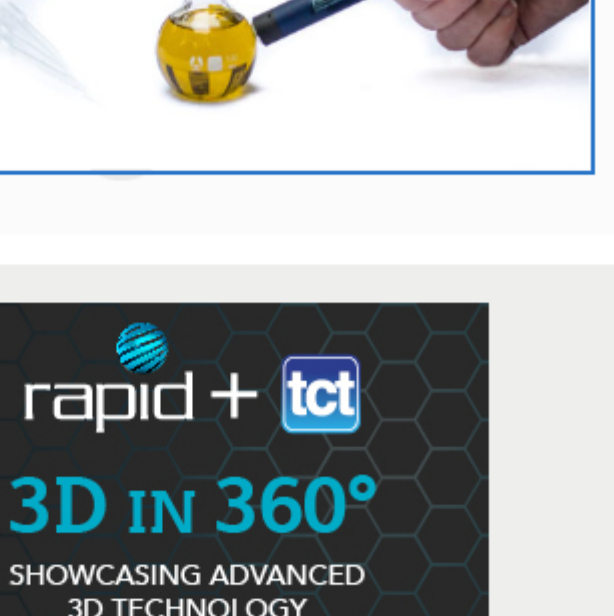
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Webinars

Hand-held Spectrometers in 2018 and Beyond
Wed, May 16, 2018 1:00 PM - 2:00 PM EDT
This webinar will survey the hand-held and portable spectroscopy field, with an emphasis on optical instruments, their underlying technologies and their applications. X-ray fluorescence, laser-induced breakdown spectroscopy and gas chromatography-mass spectrometry will be covered briefly. Presenter Richard Crocombe, Ph.D., will review some of the devices that are on the market today and conclude with a look at where hand-held spectroscopy could be headed, touching on the rapidly developing fields of "smartphone spectroscopy" and "portable spectroscopic imaging".

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Coming in May...

Features
Semiconductor Lasers; Adaptive Optics; Volumetric Displays; Two-Dimensional Materials; Quantum Dot Spectroscopy

Issue Bonus
History of the Laser

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 Managing Editor Mike Wheeler at michael.wheeler@photonics.com or use our online submission form www.photonics.com/submitfeature.aspx.

About Photonics Spectra

Since 1967, *Photonics Spectra* magazine has defined the science and industry of photonics, providing both technical and practical information for every aspect of the global industry and promoting an international dialogue among the engineers, scientists and end users who develop, commercialize and buy photonics products.

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