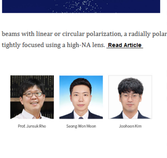
Thursday, April 11, 2024

PHOTONICS spectra

Weekly News

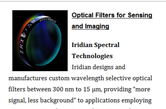


Immersion Lens Focuses Radially Polarized Beam for Laser Nanoprocessing

A research team at Tohoku University investigated the use of radially polarized laser beams, also known as vector beams, to enhance processing accuracy and resolution in ultrafast laser processing. A radially polarized beam generates a longitudinal electric field at the focus spot. Compared to conventional beams with linear or circular polarization, a radially polarized beam produces a small focal spot, especially when it is tightly focused using a high-NA lens. Read Article

Mass-Production Method Aims to Drive Metalenses Toward Widespread Commercial Use

To support the mass production of metalenses for use in applications like lidar and miniature medical devices, researchers at Pohang University of Science and Technology (POSTECH) and Korea University collaborated to develop two methods for the scalable, wafer-scale manufacture of metalenses operating in the NIR region. The techniques devised by the team could reduce the cost of metalens production by as much as 1000×. Read Article



Microprism-Mediated Calcium Imaging Reveals Neural Dynamics Over Time

An approach to deep brain imaging developed at the University of Washington uses microprisms to provide stable tracking of neuronal activity over a large field of view. According to the research team, the microprism technique is a significant improvement over existing imaging methods used to characterize neuronal ensemble dynamics within deep brain tissues. Read Article

Featured Products & Services

Optical Filters for Sensing and Imaging

Iridian Spectral Technologies

Iridian designs and manufactures custom wavelength selective optical filters between 300 nm to 15 µm, providing "more signal, less background" to applications employing remote sensing, detection, and imaging such as Earth observation, lidar, machine vision, M/LWIR gas detection.

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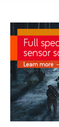
HE Laser Mirrors & Beamsplitters

Perkins Precision Developments LLC

PPD's custom Polarizing beamsplitter cubes, dichroic laser mirrors, and output couplers exhibit both low absorption and high damage thresholds (20J), making them ideal for use with high-energy Nd:YAG and fiber lasers as well as other high-power pulsed and CW laser systems.

Visit Website | Request Info



High Performance 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. Quasi-Rugate design structures have the highest demonstrated Laser Damage Thresholds of any Ion Beam Sputtered films.

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CODE V Optical Design Software

Synopsys Inc., Optical Solutions Group

The CODE V 2024.03 release offers improved design workflow, faster image simulation, and enhanced learning capabilities. New features like Multi-Environment Coupling, an expanded Example Model Library, and metalens support have been introduced to foster innovation, save time, and provide comprehensive system analysis.

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More News

Project HiFi Addresses Quantum Frequency Conversion

Luxium Solutions to Acquire Inrad Optics

Honeywell to Acquire Optical Gyro Specialist Civitanavi Systems

QED Technologies Names Michael Mohammadi President and CEO

Latest Webinars

Optical Filters: Application and Design Considerations

Tue, Apr 23, 2024 1:00 PM - 2:00 PM EDT

Optical filters can discretely transmit or reject specific wavelengths or ranges of wavelengths of light. Utilizing this capability in photonic-based instruments creates the need for a better understanding of optical filter design considerations and how specifications influence performance and cost. Craig Hanson of MKS/Newport discusses the fundamental principles of optical coatings and filter types and explains the significance of filter parameters and the benefits of design review. He also explores accessory options and subsystem integration. Next Hanson covers unique manufacturing processes and capabilities for custom optical filters from prototype to high-volume production. Finally, this presentation concludes with an open Q&A, for which Hanson is joined by Mark Roberts, principal thin-film engineer at Newport. Presented by MKS Newport.

Register Now

Optical Frequency Combs: The Pinnacle of Precision from the Visible to the MIR

Thu, May 16, 2024 11:00 AM - 12:00 PM EDT

In this webinar, Thomas Quenzel from Menlo Systems delves into the fundamental principles behind frequency comb generation and manipulation, shedding light on its transformative potential across multiple spectral domains. He shares about the world of precision measurement, where frequency combs serve as indispensable tools for metrology, spectroscopy, and beyond. From ultraprecise optical clocks to high-resolution molecular spectroscopy, discover how frequency comb technology enables unprecedented levels of accuracy and resolution in scientific research and industrial applications. For a seasoned researcher, industry professional, or enthusiast who is eager to uncover the cutting-edge developments in frequency comb technology, this webinar offers valuable insights and inspiration. Join as Quenzel unravels the vast potential of frequency comb technology and its transformative effect on the future of science and technology. Presented by Menlo Systems.

Register Now

All Things Photonics

The Almighty Soliton — With Andrea Blanco-Redondo

As an endowed professor at The University of Central Florida College of Optics and Photonics (UCF CREOL), **Andrea Blanco-Redondo** focuses on some of the most exciting topics in photonics research. While some of her research interests are just beginning to emerge in commercial and consumer applications, others stand very solidly in the realm of R&D, eagerly awaited by industry. Our conversation spans topics in soliton photonics, slow light, and quantum topology. Also, **Torsten Vahrenkamp** and **Matthias Trinker** of the management team at flconTEC, discuss ELAS Technologies Investment — a capital firm spurring high-tech business success at global scale.

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