

This Week in PHOTONICS

PHOTONICS MEDIA photonics.com



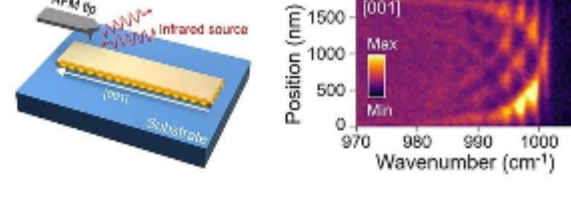
Shortwave Infra, Broadband Spectrum Solution Provider
State-of-the-Art of Customized Service and Simulation **WANT A QUOTE?**

:: Top Stories

Synthesized Nanoresonators Harness Power of IR for Optics and Electronics

To make high-quality crystals that resonate strongly with IR light, researchers at Stanford University and Lawrence Berkeley National Laboratory (LBNL) developed a bottom-up, self-assembly approach to synthesize nanostructures with crystal qualities consistent with bulk single crystals. The ultrathin nanostructures act as ultrahigh-quality, nanoscale resonators of lattice vibrations at IR frequencies, to provide a high-performance, low-loss platform for IR applications.

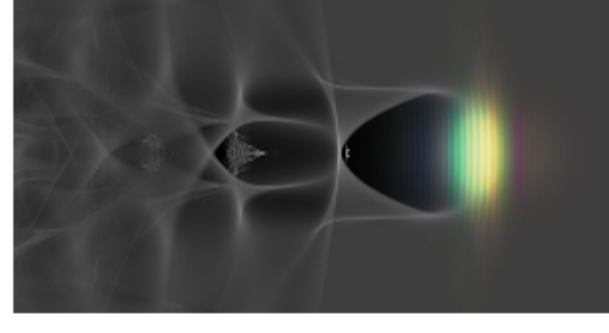
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High-Powered Lasers Pegged to Advance Muon Imaging

Scientists at the Lawrence Livermore National Laboratory (LLNL) National Ignition Facility (NIF) are leading an initiative that will use high-power lasers to accelerate the time needed to capture muon images. Muons are naturally occurring subatomic particles that can penetrate very dense material far deeper than x-rays.

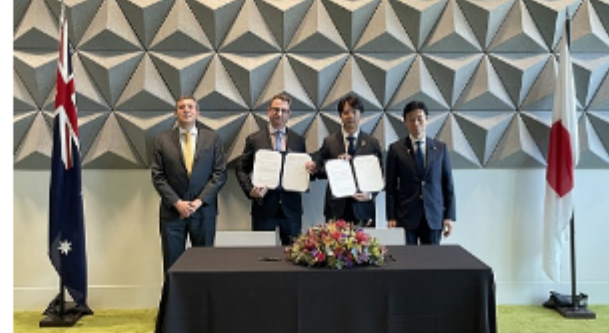
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EOS Space Systems, EX-Fusion Team to Tackle Space Debris

Electro Optic Systems (EOS) Space Systems, a provider of space-based optical surveillance capabilities, has entered into a memorandum of understanding with EX-Fusion, a startup working on laser fusion technology, to explore the usage of high-power laser technologies developed for laser fusion purposes to help address the space debris problem. The companies will investigate next-generation space debris tracking and clearing technologies, evaluating the use of EX-Fusion's high-power laser technologies for space debris tracking and clearing.

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:: Featured Products & Services



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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Pulsed Laser Spectrum Analyzer

Bristol Instruments Inc.
The 772B-MIR Laser

Spectrum Analyzer is for pulsed lasers operating from 1 to 12 μm . It measures wavelength to an accuracy of ± 10 parts per million, and bandwidth and longitudinal mode structure to a resolution of 4 GHz, providing the ideal solution for scientists and engineers who need to know the spectral properties of their pulsed mid-IR lasers.

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:: Upcoming Webinars

Mastering Diffraction Gratings: Selection and Integration Techniques for Analytical Instrumentation

Tue, Nov 7, 2023 1:00 PM - 2:00 PM EST

Imagine optical elements that rival lenses or mirrors superimposed with a precise pattern of microscopic periodic structures. These are diffraction gratings that can be used in a wide range of applications, spanning the UV, VIS, and IR spectra. They find homes in absorption and emission spectrometers, fluorimeters, liquid diffraction gratings, fundamental telescopes. They find homes in and emission laser pulse duration. Craig Hanson of MKS/Newport provides fundamental insight into diffraction gratings, shares knowledge on selecting the right grating, explores accessory options, and dives into seamless subsystem integration. He also unveils the extraordinary capabilities of Newport Richardson Gratings, shedding light on the company's unique manufacturing process. The webinar concludes with an open Q&A, for which Craig Hanson is joined by colleague Jason Rama. Presented by MKS Newport.

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Next-Generation Instrumentation for Optical Control and Characterization

Wed, Nov 8, 2023 1:00 PM - 2:00 PM EST

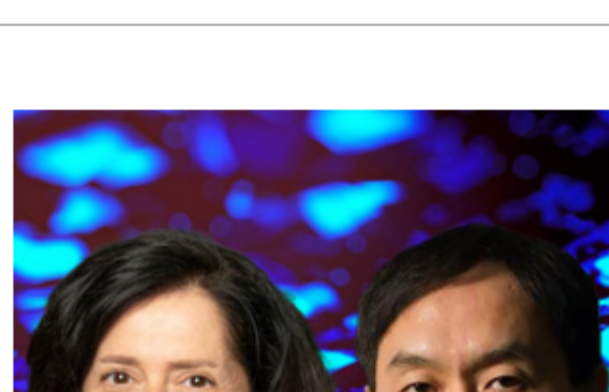
The characterization and control of optical systems with multiple stand-alone pieces of test equipment often presents difficult challenges that lead to lower stability, more noise, and increased system complexity. With flexible, digitally implemented instruments, though, it's easy to optimize optical control systems with agility and speed. During this special presentation, Kate Mueller and Steve Kuhn from Liquid Instruments share next-generation strategies to characterize and control an optical system with flexible, reconfigurable, FPGA-based instrumentation. The presentation integrates multiple software-defined instruments in one system, including a lock-in amplifier, phasemeter, PID controller, and frequency response analyzer, to explore novel phase detection techniques. Tune in to discover new ways to fully characterize open- and closed-loop system responses, improve measurement confidence and speed with dedicated phase detection, consolidate legacy test equipment, and reduce costs with software-defined instrumentation. Presented by Liquid Instruments.

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:: All Things Photonics

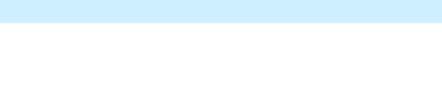
"All Things Photonics" broadcasts from SPIE Optifab 2023 in Rochester, N.Y. In this episode from the heart of the optics industry, we speak with Chunlei Guo, from the University of Rochester's Institute of Optics, and Carolyn McMorran, from central Florida's Valencia College. Guo and his collaborators recently advanced their acclaimed fano-resonant optical coating technology, and our conversation spotlights the advance and its significance. McMorran is leading Valencia College's new optics program, an AmeriCOM Center for Optics Manufacturing (AmeriCOM) photonics technician training initiative that follows successful implementations in Rochester and Colorado.

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