Thursday, January 19, 2023

This Week in PHOTONICS

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.: Top Stories

Hamamatsu Advances Laser Fusion R&D with 100-J System

Building on an existing multiyear R&D pursuit to establish technology that produces laser pulses at 250 J with a repetition rate of 10 Hz, Hamamatsu Photonics developed a laser system that produced pulses with an energy of 100 J at a repetition rate of 10 Hz. In 2021, Hamamatsu developed an industrial pulsed laser system that produced a pulse energy of 250 J at a repetition rate of 0.2 Hz and an average output power of 50 W, which it said was the highest energy to date among laser diode- (LD)-pumped lasers.

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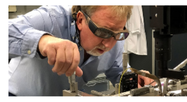
SPIE Names 2023 Award Winners



SPIE's Awards Committee has named the recipients of its annual awards, recognizing achievements and service in photonics research, education, and industry. Among the winners are Graham Reed, who received the SPIE Gold Medal for his work in silicon photonics, and John Greivenkamp, who was posthumously awarded the SPIE Director's Award for his long-standing service and leadership.

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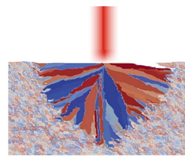
Simulation Process Optimizes Additive Manufacturing Parameters



A method of simulation of the additive manufacturing process could enable better yields and higher-quality results. Researchers from Fraunhofer member institutions combined different methods to develop a simulation of the 3D-printing process itself, at the microstructure level, in order to identify direct correlations between the workpiece properties and the selected process parameters.

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IR Filters

Deposition Sciences Inc. (DSI)

DSI designs and manufactures bandpasses, beamsplitters, ARs, and absorption coatings for use in the MWIR thru LWIR wavelength regions, customized to specific applications. Using photolithography, we can also pattern these coatings with feature sizes as small as 20 µm.

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871 Series Laser Wavelength Meter

Bristol Instruments Inc.

Bristol's popular 871 system measures laser wavelength at a sustained rate of 1 kHz, the fastest available. It also measures wavelength to an accuracy as high as ±0.0001 nm. By combining proven Fizeau etalon technology with automatic calibration, the most reliable accuracy is ensured for the most meaningful experimental results.

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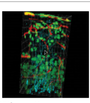

Quantitative Stimulated Raman Scattering Microscopy: From Molecules to Animals

Tue, Feb 14, 2023 1:00 PM - 2:00 PM EST

Dan Fu, Ph.D., from the University of Washington highlights the capability of stimulated Raman scattering (SRS) microscopy in imaging various molecules in heterogenous samples from simple mixtures to living cells and animals. He then shares the challenges in quantitative analysis with SRS imaging due to scattering, as well as potential solutions in leveraging water as an internal standard. With continuous improvement in imaging resolution, sensitivity, and specificity, SRS is poised to play an important role in biomedical imaging.

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Innovations in Interferometry: Fourier Transform Spectroscopy in the Palm of Your Hand

Wed, Feb 15, 2023 10:00 AM - 11:00 AM EST

Alex Barker of NIREOS shares how a common-path visible interferometer functions, as well as the counterintuitive ways in which it differs from a dispersion-based spectrometer. In a short time, these instruments have been used for a startling variety of spectroscopic experiments, such as time-resolved fluorescence, pump-probe spectroscopy, and stimulated Raman scattering. Using these examples, Barker demonstrates the advantages and disadvantages that common-path visible interferometers provide.

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