Thursday, July 27, 2023

This Week in PHOTONICS

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.: Top Stories

One-Camera Method Reveals Added Insights in Additive Manufacturing

Carnegie Mellon researchers developed a single-camera method to measure the melt pool temperature during laser powder bed fusion. The method can be applied to any color camera to deliver information of the physics occurring in the melt pool during additive manufacturing. The researchers used a commercial color camera for their setup.

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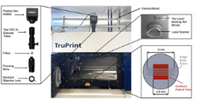

Optalysys Raises $27M to Advance Data Protection Tech

Photonic computing company Optalysys has raised £21 million ($27 million) in series A funding. The investment will allow the company to advance its Enable photonic computing technology to unlock a new form of secure processing known as fully homomorphic encryption (FHE).

Read Article

Optofluidic Micromanipulations Show Aptitude in Laser Biomedicine

Techniques for micromanipulation support nanostructure assembly, particle trapping, and the spatiotemporal analysis of cell organization. Introducing optically induced thermoviscous flows can be used to optically move the cytoplasm in cells and developing embryos, for example, and can be used in intracellular rheology. Scientists at Karlsruhe Institute of Technology have now developed nearly isothermal scan sequences that exploit symmetry relations during laser scanning to disentangle laser heating and flow induction. The researchers' scan sequences use dynamic photothermal stimuli and spatiotemporal symmetry relations of scanning bridging up to three distinct timescales.

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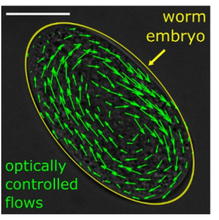

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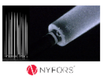

CO$_2$ Laser Glass-Processing

NYFORS Teknologi AB

CO$_2$ laser glass-processing is designed to produce high-power and sensitive photonic components and complex structures. It guarantees contamination-free processing for fiber linear, 2D and gapless array splicing, ball lensing, end-capping, and many other challenging processes.

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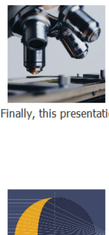

Nanoscale Imaging Techniques

Wed, Aug 2, 2023 1:00 PM - 2:00 PM EDT

Golshan Coleiny of Fundamental Optical Solutions shares a brief history of nanoscale imaging with a focus on optical technologies, addressing many of today's challenges in optical limitation imaging and other applicable technologies. She discusses techniques that utilize optical nanomicroscopy for higher resolutions and their advantages and limitations in comparison to non-optical nanomicroscopy. Finally, this presentation shares a road map for further development of advanced tools in nanotechnology.

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Stigmatic Optical Imaging: The Past, Present, and Future

Tue, Aug 22, 2023 1:00 PM - 2:00 PM EDT

The exact equation to design a stigmatic lens has recently been found and extensively studied. This equation allows researchers to explore several stigmatic optical systems showing the systems share several properties. In this presentation, Rafael González-Acuña of Huawei Technologies reviews those properties, starting from the history of the problem in ancient Greece to its solution that was published in 2018. He addresses that solution step by step and explores the mathematical details. He also shares the benefits, applications, and future possibilities of this equation.

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