Thursday, September 8, 2022

This Week in PHOTONICS

PHOTONICS MEDIA photonics.com

.: Top Stories

Wireless Power Transfer System Brings Automated Charging Potential

A wireless charger overcomes some of the challenges that have hindered previous attempts to develop safe and convenient on-the-go charging systems. Tests showed that the system could transfer 400 mW of light power over distances of up to 30 m. This power is sufficient for charging sensors, and with further development, it could be increased to levels necessary to charge mobile devices.

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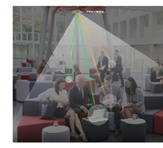

NASA Reveals First Exoplanet Images Taken by Webb Telescope

Astronomers from the University of Exeter in the U.K. used NASA's James Webb Space Telescope to capture the first direct image of a planet outside our solar system. The image, shown through four different light filters, demonstrates how the telescope's infrared capabilities can lead the way to observations that will reveal more information than previously possible about exoplanets.

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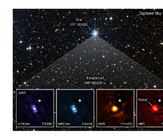

Expanding Expansion Microscopy to Reveal Hidden Nanostructures

Inside a living cell, proteins and other molecules are often tightly packed together. These dense clusters can be difficult to image because the fluorescent labels used to make them visible can't wedge themselves in between the molecules. Researchers at MIT developed a method to overcome this limitation by expanding a cell or tissue sample prior to labeling, effectively de-crowding the molecules and making them more accessible to fluorescent tags.

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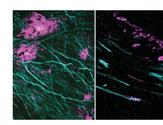

.: Featured Products & Services

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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Gantries for 3D Print & Photonics Applications

PI (Physik Instrumente) LP, Motion Control, Air Bearings, Piezo Mechanics

Gantries typically provide motion in 2 or 3 linear degrees of freedom (X-Y and X-Y-Z) and are often used for pick and place applications, 3D printing, laser machining, and welding applications. PI Gantry systems are available in different size, load, and precision classifications including mechanical bearings, hybrid systems...

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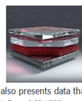

SWIR Colloidal Quantum Dot Sensor Bandwidth and Thermal Stability: Progress and Outlook

Tue, Sep 20, 2022 1:00 PM - 2:00 PM EDT

Ethan Klem, Ph.D. of SWIR Vision Systems provides an overview of the performance of high-definition colloidal quantum dot (CQD) sensors and shows the less than 3 nanoseconds rise and fall time found by testing the response time of the photodiode structure using a pulsed laser source. He also presents data that demonstrates stable device operation at elevated temperature and humidity conditions. Shortwave infrared (SWIR) sensors, made using CQD photodiodes, offer CMOS-like opportunities for highly scalable, small pixel pitch sensors. This is due to the sensors' straightforward, monolithic integration with silicon circuitry.

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Spectral Domain Optical Coherence Tomography Spectrometers for Today and Beyond

Wed, Sep 21, 2022 1:00 PM - 2:00 PM EDT

Spectral domain optical coherence tomography (SD-OCT) is commonly used for ophthalmologic applications, particularly in the diagnosis and treatment of macular degeneration. It is also consistently used in research for new applications in both medical and manufacturing sectors. Heidi Olson of Ibsen Photonics discusses some of the methods currently available to achieve better SD-OCT images, as well as the new applications that can be unlocked with further development. The limitations of the available products are also explored specifically in reference to how the boundaries can be pushed to achieve better quality data with relaxed performance requirements.

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