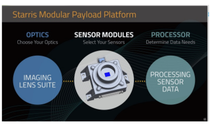
Thursday, August 1, 2024

PHOTONICS spectra

Weekly News

Stacked Vertical MoS2 Layers Show Strong Optoelectrical Qualities

An international research team led by professor My Ali El Khakani of the Institut national de la recherche scientifique, in collaboration with professor Mustapha Jouiad's team at the Université de Picardie Jules Verne, has proposed a new way to grow molybdenum disulphide (MoS2) films. The method bypasses traditional challenges associated with the material and could unlock innovations in optoelectronics and renewable energies. Read Article



Optimax Launches Dedicated Space Systems Business

Rochester-based optics manufacturer Optimax is launching Starris: Optimax Space Systems, a business operating under the Optimax corporate structure. Starris will focus on the development of space-qualified optical payloads, enabling customers to enter space economy quickly and with low risk, the parent company said in an announcement. Read Article

Recyclable Polymers Offer Light-Emitting Efficiency and Sustainability

Researchers at the U.S. Department of Energy's Argonne National Laboratory worked with colleagues at the University of Chicago, Purdue University, and Yale University to design a sustainable luminescent polymer. To enable recyclability of the material while maintaining high light-emitting efficiency, the researchers developed thermally activated delayed fluorescence polymers with cleavable moieties and incorporated tert-butyl ester, a chemical that breaks down when exposed to heat or mild acid, into the polymers to make them biodegradable. Read Article

Featured Products & Services

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Green Laser to Deliver Stability

Amplitonyx Oy

The AMPX-PICO-532 picosecond green fiber laser, developed with patented technology, is designed to break new ground in time and spectral resolution flavored by versatile OEM integration and elegant control.

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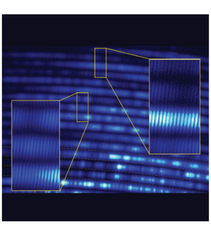
Cepton to be Acquired by Koito

IEEE Photonics Society Names Award Recipients

NIST Updates UV Calibration System

PsiQuantum to Build Utility-Scale Quantum Computer in Chicago

Latest Webinars



Measuring Starlight with an Ultrafast Laser: Astrocomb Development for the Extremely Large Telescope

Tue, Aug 6, 2024 10:00 AM - 11:00 AM EDT

In this webinar, Yuk Shan Cheng of Heriot-Watt University explores the important role of the Extremely Large Telescope's (ELT) ANDES spectrograph and its need for a high-precision frequency calibrator in order to pursue exciting ventures. She focuses on the development of astrocombs, which are laser frequency comb systems that can provide thousands of stable, atomically referenceable, and evenly spaced calibration lines. Despite their demonstrated success in labs and various telescopes worldwide, integrating astrocombs into modern telescope facilities presents challenges, including aligning their mode spacings with the spectrograph's resolving power and achieving broad spectral coverage, particularly in the UV-blue/green wave band. This presentation covers the approaches to these challenges, recent implementation at the Southern African Large Telescope, and advancements in astrocomb technology at Heriot-Watt University, including the development of the first continuous UV-blue/green astrocomb.

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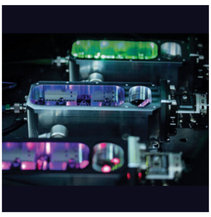

Industry Innovations in Fiber-Based Frequency Combs: Ultrabroadband Comb with Sub-3-kHz Free-Running Linewidths

Tue, Aug 27, 2024 1:00 PM - 2:00 PM EDT

Femtosecond frequency combs represent unparalleled measurement tools with diverse applications in spectroscopy, metrology, and quantum physics. This talk delves into the critical aspect of maximizing the passive stability of these instruments to unlock their full potential in fundamental science and high-tech industries. By studying systematically, the noise properties of fiber-based frequency combs across varying intracavity dispersion, pump power, and repetition rate parameters, researchers have notably identified distinct minima where the free-running linewidth of the carrier-envelope offset (CEO) frequency fCEO drops below 1 kHz. A comprehensive analysis of individual comb lines across a broad spectral range unveils the specific contributions to phase noise and their interplay. Leveraging these insights, this presentation showcases the development of frequency combs with sharp teeth at designated positions throughout the spectrum from fCEO to 300 THz. These compact systems offer ultrabroadband stability, presenting a new standard for front-end measurement such as integrated quantum clocks experiments based on Strontium atoms. Sponsored by Toptica Photonics.

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