Thursday, August 3, 2023

This Week in PHOTONICS

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.: Top Stories

Photonic Computing System Rethinks How to Power Familiar AI Tool

MIT researchers demonstrated a photonics-based computing system that could lead to machine-learning programs several orders of magnitude more powerful than the one behind ChatGPT. By supporting large-scale optoelectronic processors to accelerate machine-learning tasks from data centers to decentralized edge devices, cellphones small devices could become capable of running programs that can currently only be computed at large data centers, according to the researchers.

Read Article

Perovskite Cells Meet Wearable Biosensor's Power Demands

Perovskite solar cells are providing a team at Caltech's Heritage Medical Research Institute with an efficient power source for wearable sweat sensors that monitor a host of biomarkers associated with disease diagnostics and fitness levels. The wearable device itself is assembled in an origami-like fashion, with individual layers dedicated to different processes.

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Applications Open for the 2024 Prism Awards

Applications are open for the 2024 SPIE Prism Awards, which will celebrate its 16th anniversary Jan. 31 during a gala evening at SPIE Photonics West. The awards, held annually by SPIE, the international society for optics and photonics, recognize and honor the most innovative products on the market across optics and photonics. Applications are open through Sept. 15.

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.: Featured Products & Services

HyperFine Spectrometer

LightMachinery Inc.

Designed for measuring hyperfine spectra and subtle spectral shifts, the HyperFine spectrometer from LightMachinery is a compact spectrometer capable of 1 picometer resolution. It is ideal for pulsed laser characterization and for measuring the small spectral shifts from Brillouin or Raman scattering.

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.: Upcoming Webinars

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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Advanced Packaging for Integrated Photonics: From Research to Manufacturing

Tue, Aug 29, 2023 10:00 AM - 11:00 AM EDT

Advanced packaging enables researchers to combine different technology platforms such as photonics, electronics, micro-electromechanical, and fluidics to address a vast array of exciting applications. Professor Peter O'Brien presents the packaging capabilities established by his research team at the Tyndall Institute, including details about the group's diverse range of research projects in areas such as telecommunications, quantum, and medical devices. The webinar outlines how these advanced packaging processes can be transferred to early-stage manufacturing through the group's leadership of the European Pilot Line, and discusses recent developments by the group to establish the European Photonics Academy to train industry and students in a wide range of advanced photonic technologies. Sponsored by Aerotech Inc.

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