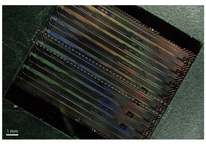
Thursday, March 14, 2024

PHOTONICS spectra

Weekly News



Novel Frequency Comb Could Enable Smartphone Spectroscopy

A microcomb developed by researchers at Stanford University could provide the basis for wide-spread adoption in everyday electronics. The frequency comb device is small, energy-efficient, and highly accurate. With further development, the team envisions applications in handheld medical diagnostic devices and widespread greenhouse gas monitoring sensors.

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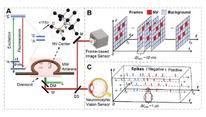

Memory Element Enhances a Human Sight-Mimicking Quantum System

Collaborating researchers from Hong Kong, China, and Germany have developed a quantum sensing technology that encodes changes in fluorescence intensity into spikes that occur during optically detected magnetic resonance measurements. The image capture technology uses a neuromorphic vision sensor designed to mimic the human vision system.

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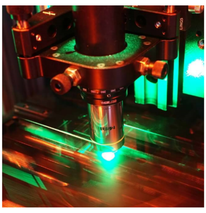

Liquid Crystals Control Polarization in Laser-Written Waveguides

Researchers in Germany have developed a way to control and manipulate optical signals by embedding a liquid crystal layer into waveguides created with direct laser writing. The work could lead to devices that enable electro-optical control of polarization. Such devices could open possibilities for chip-based devices and complex photonic circuits based on femtosecond-written waveguides.

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Featured Products & Services

Raman Microscope

WITec GmbH

The alpha300 Semiconductor Edition from WITec is a Raman microscope configured especially for semiconductor research and development. Allowing space for the Raman imaging of wafers on a bigger scale, the microscope features a large-area scanning stage that helps characterize chemical composition, crystal quality, strain, and doping in up to 300-mm (12 in.) wafers.

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Fiber Optic De-Speckler

MKS/Newport

Newport™ fiber optic de-specklers maximize performance and reliability in illumination by eliminating modal interferences for cw to modulation up to 10 kHz, with no optical loss. This small, simple, and integrated system is essential for applications where a homogeneous laser output is ideal and can easily be integrated into analytical instruments.

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Micro Imaging System for Endoscopy

FISBA AG

Custom made Micro Imaging System for Endoscopy in high-resolution and compact form — our expertise for miniaturized chip-on-tip vision systems from design to prototyping to volume production, entire process under one roof.

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Athena™ 1920 Thermal Camera Core

BAE Systems Sensor Solutions

Small, lightweight, and power efficient, the Athena™ 1920 uncooled, high-definition thermal camera core delivers imagery with exceptional clarity and minimal motion blur in harsh environments. Ideal for wide-area surveillance, threat detection and targeting, and commercial applications from ground, air, and space.

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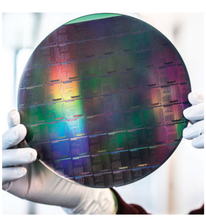
Optica Names 20 Recipients for 2024 Awards, Medals

Researchers Develop AI-Enabled Liquid Holographic Camera

Polymer-Coated Metasurface Could Enable Sensors, Networking

All-Optical Network Bridges Space, Air, Underwater Environments

Latest Webinars



Integrated Photonics for Quantum Computing

Tue, May 28, 2024 10:00 AM - 11:00 AM EDT

Realizing photonic quantum technologies, such as an optical quantum computer or a quantum communication link between distant superconducting qubits, will require the development of novel photonic components. Monolithic silicon or silicon nitride photonic platforms are falling short with respect to the requirements of the quantum domain, and it is envisioned that a hybrid solution is needed. In this talk, Christian Haffner of IMEC shortly discusses what hybrid solutions the silicon photonic platform can offer in terms of detectors, sources, and modulators. His primary focus lies on the electro-optical modulator covering the requirements that the quantum world enforces. He compares the classical and quantum theoretical framework, and sketches out what performance metrics a quantum electro-optical modulator needs to fulfill.

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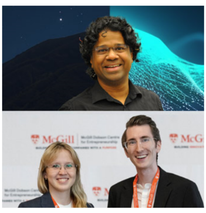
All Things Photonics



Zubin Jacob, Purdue University Elmore Associate Professor of Electrical and Computer Engineering, discusses the convergence of thermal imaging and artificial intelligence. The recently developed heat-assisted detection and ranging (HADAR) technique offers performance advantages in low-light environments, in which other modalities face drawbacks. Also, we speak with TRAQC's **Mariia Zhuldybina** and **Benjamin Dringoli**. The company recently took first place in the 2024 SPIE Startup Challenge. TRAQC's solution leverages THz light, offering real-time inspection capabilities for printed and additive electronics.

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