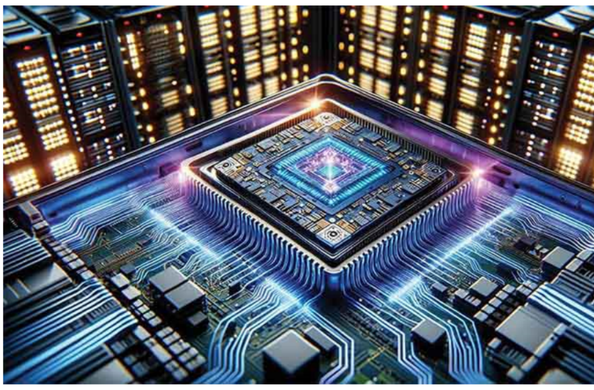
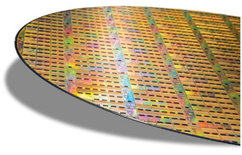
PHOTONICS spectra

Integrated Photonics Newsletter



Has Silicon Photonics Finally Found Its Killer Application?

During the last decade, the exponential growth of data center traffic has been largely fueled by general-purpose cloud- and internet-based applications, such as video streaming, social networks, internet search engines, and e-commerce platforms. More recently, the onset of artificial intelligence (AI) and machine learning that leverage large language models for both AI training and inference has added significant upside growth perspectives to the traditional data center market. **Read Article**



Understanding In-Package Optical I/O Versus Co-Packaged Optics

Recent advancements in silicon photonics are upending the optical market in the data center, with significant ramifications for how future AI, cloud, and high-performance computing systems will be designed, architected, and deployed. The core problem involves how to best connect compute chips over longer distances while maintaining bandwidth, energy, and density metrics that are acceptable for a given application. **Read Article**

More News

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PhotonDelta and MIT Update Roadmap for Integrated Photonics Progress

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Integration Method Efficiently Couples III-V with Silicon

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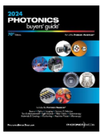

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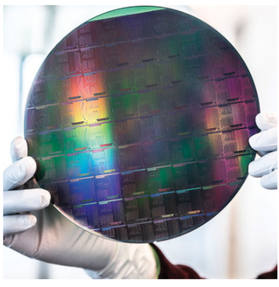

Integrated Photonics for Quantum Computing

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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