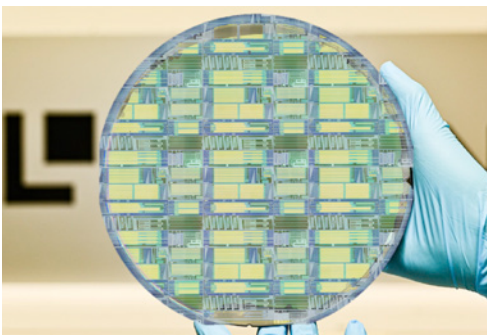


Press Release

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LIGENTEC Celebrates 10 Years of Photonic Integrated Circuit Innovation and Unveils Next-Generation TFLN and Integrated III-V Photodetector Platform at ECOC



A decade after pioneering low-loss Silicon Nitride PICs, LIGENTEC expands its active-passive photonic engine to accelerate AI interconnects, quantum computing, and high-speed optical communications.

At the European Conference on Optical Communication (ECOC), LIGENTEC, a pioneer in integrated photonics, proudly marks a major milestone: 10 years of commercial leadership in low-loss Silicon Nitride (SiN) Photonic Integrated Circuits (PICs).

Coinciding with its decade anniversary, the company today announced a significant advancement in its technology roadmap: a new generation of heterogeneous integrated Thin-Film Lithium Niobate (TFLN) and integrated III-V Photodetectors (PD) directly onto its proven low-loss SiN platform.

Founded in 2016, LIGENTEC disrupted the photonics industry with its proprietary SiN fabrication technology. By delivering ultra-low propagation loss and high power-handling capability in a scalable foundry workflow, LIGENTEC enabled global innovators to fabricate complex, low-loss PICs.

Over the past ten years, LIGENTEC has grown from an EPFL startup into a global market leader, supporting client developments in sensing, communication, and computing, including LiDAR, AI optical interconnects, coherent communications, quantum communication and computing. The platform has scaled seamlessly from prototyping to volume manufacturing, supported by strategic 200mm foundry partnerships with X-FAB in France and Germany.

“Photonics is becoming critical infrastructure – for AI, for quantum and for sensing systems that operate at the edge of what is physically possible. The teams building those systems need to know where their components come from, and that the supply chain will hold. LIGENTEC was built in Europe, for a global market, with reliability and excellence from day one.” — Thomas Hessler, CEO, LIGENTEC.

As next-generation, hyper-scale data centers push data rates toward 1.6T and beyond, conventional silicon photonics face bandwidth and integration bottlenecks. To meet these demands, LIGENTEC is unveiling its advanced multi-material integration platform at ECOC.

By heterogeneous integration of high-speed Thin-Film Lithium Niobate (TFLN) modulators and high-responsivity III-V photodetectors with ultra-low loss waveguides and ultra-low loss edge coupling, LIGENTEC creates a fully integrated, high-performance active-passive photonic platform.

Key Technical Highlights of the LIGENTEC Offering:

- Ultra-Wide Modulation Bandwidth: TFLN electro-optic modulators integrated on SiN achieve electro-optic bandwidths exceeding 100 GHz with drive voltages under 2V.
- III-V Heterogeneous Integration: On-chip III-V photodetectors deliver high responsivity at C-band and O-band and sub-picosecond response times.
- Uncompromised Low Loss: SiN propagation losses below 1dB/m, preserving high-Q optical microresonators, narrow-linewidth laser coupling, optical circuit switching (OCS) and dense wavelength division multiplexing (DWDM) capabilities.
- Energy Efficiency: Dramatically lowers power consumption per bit compared to traditional Mach-Zehnder structures and bulk modulators, addressing critical power budgets in modern AI clusters.

“Ten years ago, our goal was clear: turn the extraordinary research of low-loss Silicon Nitride into a reliable, industrial-grade product offering. Celebrating our 10th anniversary at ECOC in Malaga while maturing TFLN and integrated III-V photodetectors is a testament to our continuous pursuit of innovation. This hybrid platform combines ultra-low loss routing with ultra-fast modulation and detection, giving our customers the ultimate toolset for next-generation photonic engines.” — Michael Geiselmann, CCO and co-founder of LIGENTEC.

The heterogeneous integration of TFLN and III-V PDs onto SiN, with its superior power handling capability, creates an ideal platform for coherent communication, OCS, optical computing, and advanced Quantum Key Distribution (QKD) systems. LIGENTEC's seamless PDK, design and layout support allows chip designers to simulate, layout, and fabricate complex active-passive circuits with fast turn-around times.

LIGENTEC is demonstrating its latest technology developments at ECOC in Malaga. Attendees, commercial partners, and members of the press are invited to visit the LIGENTEC Exhibition Booth #1368 to meet the team and discuss custom design and manufacturing opportunities.

About LIGENTEC

LIGENTEC, headquartered in Switzerland, is a leader in advanced PIC technologies, providing high-performance SiN (AN) and SOI (XPH90) platforms with heterogeneous integration of different materials. Through its industrial process-design-house model, LIGENTEC provides a scalable path from design to volume manufacturing for quantum technologies, optical communications, and precision sensing. The company operates subsidiaries in France and Belgium and is ISO 9001:2015 certified.

Media Contact

LIGENTEC
Myriam Labidi
Marketing Manager
myriam.labidi@ligentec.com