

photonixFAB

Enabling photonics product innovation with a path to high-volume manufacturing

Challenges and objectives

Today, European excellence in R&D does not sufficiently translate into industrial manufacturing capabilities, market leadership and technological autonomy in various parts of the semiconductor industry. This also applies to the area of silicon photonics.

The objective of this EU-funded project is to establish a European photonics device value chain and initial industrial manufacturing capabilities, providing a path to scalable high-volume manufacturing for innovative product developers.

Technical goals

- Transferring IMEC's SOI photonics platform to X-FAB for industrial manufacturing, targeting high-speed and sensing applications
- Extending LIGENTEC's technology to set the industry standard for SiN photonics, focused on ultra low loss applications (sensing and quantum computing)
- Enhancing photonics IC with heterogeneous integration using SMART Photonics' InP components (lasers, modulators, detectors) via transfer-printing.
- Strengthening the ecosystem with Design Automation from LUCEDA, innovative packaging, and increased testing capabilities from PHIX and global R&D support from the major EU RTOs CEA-Leti and IMEC
- Validating the platform capabilities through six application-oriented demonstrators from Aryballe, NOKIA, NVIDIA, PHOTONFIRST and THALES
- Setting up a value chain and multi-project wafer access to serve innovation by start-ups, SMEs and large entities



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photonixFAB value chain



Expected impact

- Strengthen the EU open market with competitive industrial-grade and mass-production scalable SiN and SOI photonics platforms
- Federate key players and foster collaboration of the European photonic ecosystem along the whole value chain
- Support SME innovation and prototyping activities on a path to mass production
- Share knowledge through dissemination, exploitation and communication

Additional information

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