



Press Release

X-FAB, SMART Photonics and Epiphany Design demonstrate InP-on-Silicon design flow for next-generation optical transceivers at OFC

Collaborative platform combines InP chipllets with SOI technology via Micro-Transfer-Printing for high-speed, energy-efficient optical transceivers

Tessenderlo, Belgium; Eindhoven & Enschede, The Netherlands – March 26, 2025

[X-FAB Silicon Foundries SE](#), the leading analog/mixed-signal and specialty foundry, [SMART Photonics](#), the leading Indium Phosphide (InP) integrated photonics foundry, and [Epiphany Design](#), a fabless photonic design house specialized in hybrid and heterogeneous photonics, are collaborating to develop a new heterogeneous photonics integration platform that combines the strengths of InP and Silicon-on-Insulator (SOI) technologies, enabling multi-tera bit data rates for datacom and telecom applications.

Through the co-optimization of SOI, InP, and Micro-Transfer-Printing (MTP) technologies, the new platform aims to address customer requirements for high-speed data rates and energy efficiency in high-volume manufacturing of optical transceivers. It also enables new functionalities and improved system performance while reducing integration costs through relaxed photonics packaging requirements. MTP technology, pioneered by X-Celeprint, provides a broad degree of freedom for the system and product designers, by allowing flexible integration of chipllets into the product design.

The collaboration has made significant progress, resulting in the development of a design flow and PDK that enables the design of photonics circuits integrating InP chipllets on an SOI platform. This design flow is implemented in Luceda's IPKISS EDA tool. Luceda's technical expertise and support enabled the design of the demonstrator.

As part of this development, Epiphany Design – an X-FAB innovation and XCHAIN partner – has successfully demonstrated the new heterogeneous InP-on-SOI design flow with an



optical transceiver demonstrator. This collaboration will be showcased at the 50th Optical Fiber Communication Conference (OFC) in San Francisco next week.

The companies will be available at OFC 2025 – the premier global event for optical networking and communications – to discuss their respective technologies, the ongoing collaboration, and services at the following booths:

- Epiphany Design: # 6065 (NL Pavilion)
- SMART Photonics: # 6067 (NL Pavilion)
- X-FAB: # 4961

Jörn Epping, CEO of Epiphany Design, comments: "By bringing together the integration density of silicon with the high performance of InP actives, we enable new possibilities for disruptive innovation in telecom, datacom, and beyond. This approach empowers PIC designers with greater flexibility and a clear path towards scalable, high-performance PIC-based solution."

This collaboration builds upon the [PhotonixFAB](#) EU funding project, which supports the development of industrial pilot lines for silicon photonics SOI, micro-transfer print ready InP chipllets and MTP of InP chipllets on SOI and SiN photonics wafers.

The complete design flow will be available for early access in the first quarter of 2026. The goal is to support lead customers industrial prototyping by mid-2026, with production ramp-up readiness in 2027.

– END –

About X-FAB

X-FAB is a global foundry group providing a comprehensive set of specialty technologies and design IP to enable its customers to develop world-leading semiconductor products that are manufactured at X-FAB's six wafer fabs located in Malaysia, Germany, France, and the United States. With its expertise in analog/mixed-signal technologies, microsystems/MEMS and silicon carbide (SiC), X-FAB is the development and manufacturing partner for its customers, primarily serving the automotive, industrial and medical end markets. X-FAB has approximately 4,500 employees and has been listed on Euronext Paris since April 2017 (XFAB). For more information, visit www.xfab.com



About SMART Photonics

Integrated photonics uses the power of light to create energy-efficient, faster, and more accurate microchips. The technology is set to play an essential role in finding and developing solutions for the world's challenges, such as reducing energy consumption, improving healthcare, fighting food waste and our continuous hunger for information. As a foundry for integrated photonic circuits, SMART Photonics offers solutions for data and telecommunication, as well as for sensing – such as Lidar – and medical applications. And it doesn't stop there. SMART Photonics is the leading foundry for integrated photonics, creating innovative products that improve people's lives. For more information, visit <https://smartphotonics.nl/>

About Epiphany Design

Epiphany Design is a Netherlands-based photonic design house specializing in photonic integrated circuits (PICs). With expertise in hybrid and heterogeneous photonic designs, including tunable narrow-linewidth lasers, Epiphany provides end-to-end design services and manages the photonic supply chain, supporting customers from design to packaging and testing for various PIC applications. For more information, visit <https://www.epiphany-design.com/>

Press Contacts

X-FAB

Anja Noack
MarCom Manager
X-FAB Silicon Foundries
+49-361-427-6162
anja.noack@xfab.com

SMART Photonics

Erik Luyk
MarCom Manager
SMART Photonics
+31-6156-60387
erik.luyk@smartphotonics.nl

Epiphany Design

Jörn Epping
CEO
Epiphany B.V.
+31-53-2065-007
j.epping@epiphany-design.com

Acronyms

EDA	Electronic Design Automation
InP	Indium Phosphide
MTP	Micro-Transfer-Printing
OFC	Optical Fiber Communication Conference
PIC	Photonic Integrated Circuit
SOI	Silicon-on-Insulator