Fiber-to-chip interconnects

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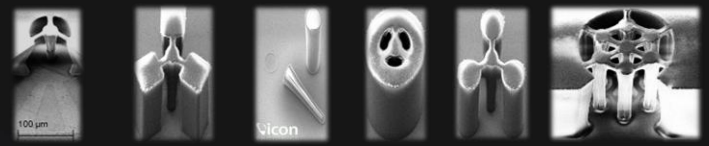
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Paris Region Deep Tech Ecosystem

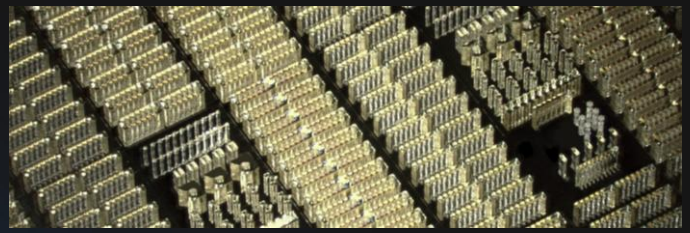
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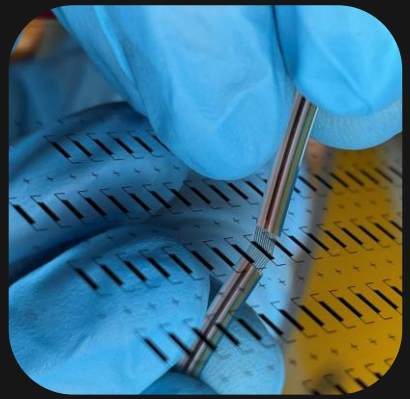
- **Industrial Deeptech Startup, created in 2018**
- **Photonics Packaging / NPO / CPO / Fiber-to-the-chip detachable connectors**
- Wafer-level co-packaging truly scalable for AI factories (Mparts/y)
- **Bring the fibers closer to the chip** with LPO, NPO, CPO for scale-up / -out of XPUs, OPUs and OCS (enabling x5 power reduction, x10 reliability improvement, >10 Tbps/mm density)

Contact : jean-luc.polleux@icon-photonics.com

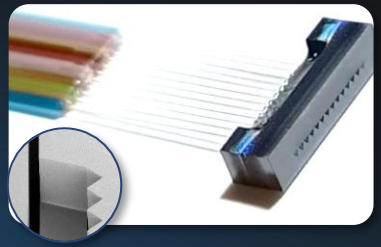
Wafer-level-photonics-packaging at ICON Photonics



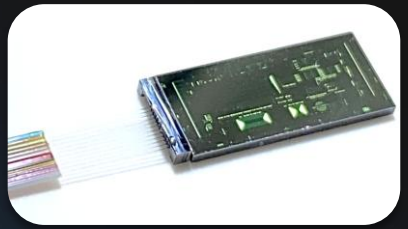




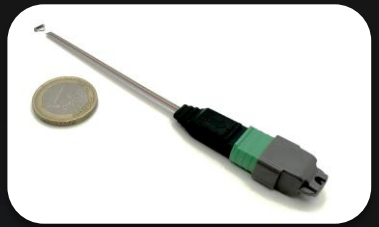




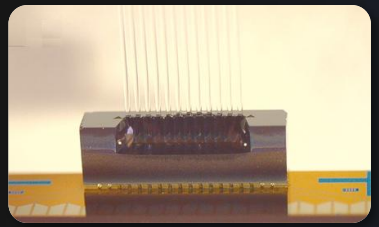
World smallest form factor FAU



High FAU to PIC compactness



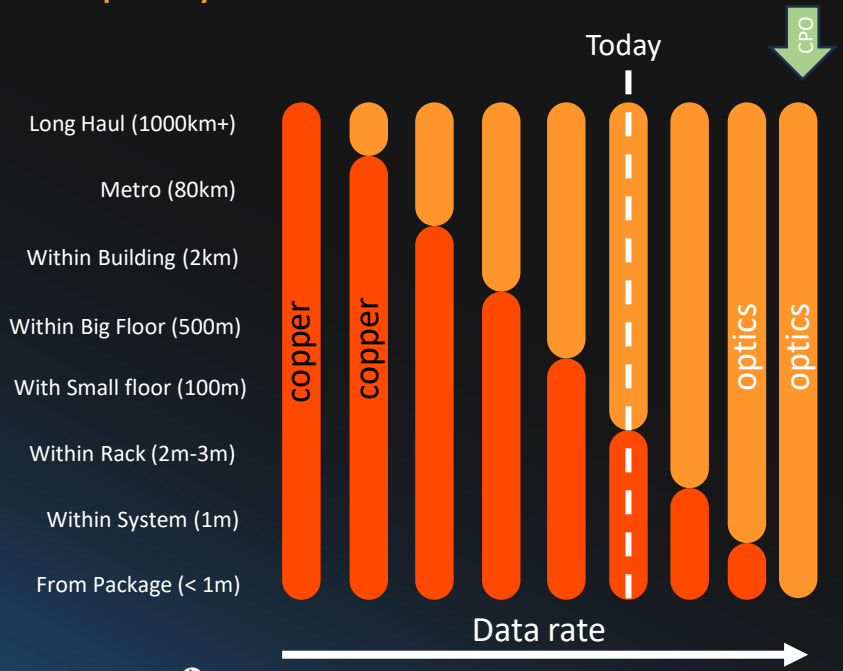
Universal FAU & FAU-SSC



High qubit density /mm²
down to 10mK

Bandwidth & Power demand, AI Boom, making Co-Packaged Optics (CPO) inevitable

Data centers' power demand will rise from **3% to 8% of U.S. consumption by 2030**

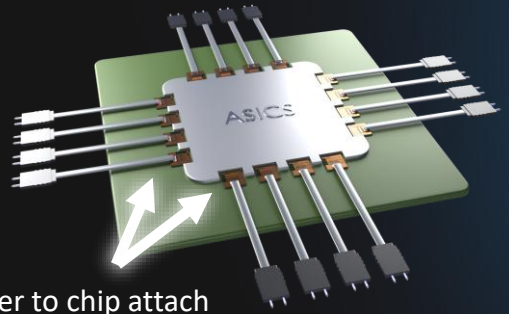


30% to 80% Power Consumption Savings

40% Lower Optics Cost per Bit

Enabling **1⁺ Tbps/mm** Bandwidth Density

Attaching Fibers to Chip: The Key Bottleneck



Fiber to chip attach

Industry needs:

- Fiber density: enabling 1000+ fibers per switch
- Replaceability required = **detachability**
- Scalability: mass production compatible

The current solutions are **inefficient**, **costly**, and prevent the industry from **scaling** to meet future demands.

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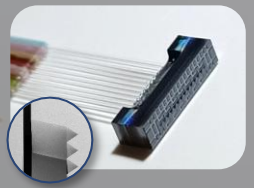
- Links to 6G / the SNS JU (products, projects, etc.) or the Chips JU : **AI factories / microwave-photonics convergence in 6G**
- **2026-2028 EIC-Accelerator SPARC + 2025-2028 HORIZON-EUROPE SPACELINK**
- Relevant sections/topics of the 2027 SNS JU Work Program
  - **Flagship projects** (integrated photonics, CPO, neuromorphic OPU, RF convergence)
  - **Optical Connectivity for Massive AI** (low latency / high-capacity fibers: HCF, MCF, highly integrated EO components, lasers, NPO, CPO)

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Revolutionizing data transfer with scalable, detachable optical connectors.

SPARC EIC-A – **Scalable Photonic pAckaging for high-peRformance optiCal interconnects**





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Transforming how **fiber optics** connects our digital world toward a more **sustainable future**