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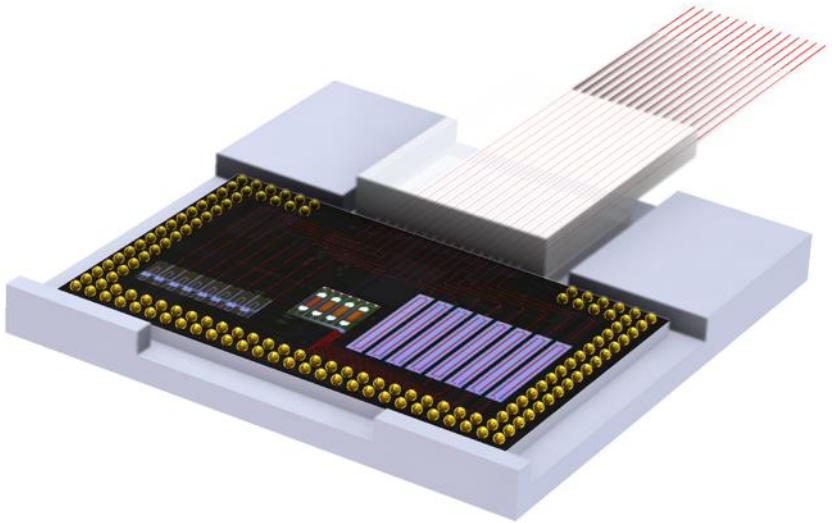

Augmented III-V Silicon Photonic IC with Integration of lasers, for large and high growth markets

Yannick PAILLARD, CCO

April 4th, 2022

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COMPANY OUTLOOK

- **Fabless company** developing **Silicon Photonic Circuits** with **integrated lasers**
- Created in November 2018, Grenoble, France
- Raised 4M€ in August 2019 from private funds + 4M€ of additional loans/ grants
- Core technology developed at CEA-Leti, > 18years of R&D
  - Silicon Photonics, Lasers & Molecular Bonding
  - **> 20 patents licensed**

- Manufacturing agreements with **commercial foundry** & **Industrial partners**
- Early product development engagement with 3 major customers in **Telecom, Datacom & HPC**

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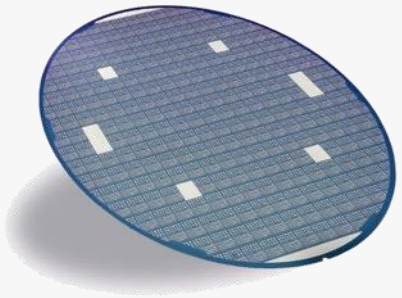
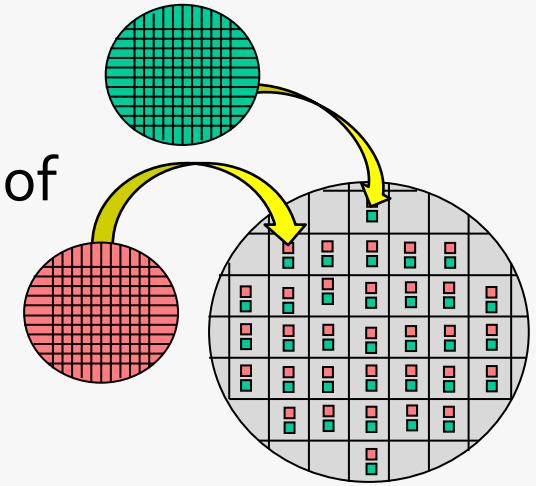
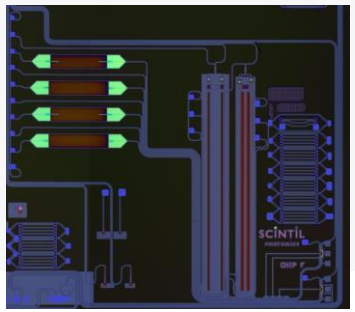
OUR UNIQUE TECHNOLOGY



The BEST of SiPho & InP Photonics with a BackSideOn-BOX integration

1. Process **Silicon Photonics** devices in a **Commercial SiPho** foundry leveraging **standard** SiPho platform
2. Bond unprocessed III-V/InP dies on the **backside** of the SiPho processed wafer,
3. Complete the lasers fabrication with a **CMOS-compatible process**





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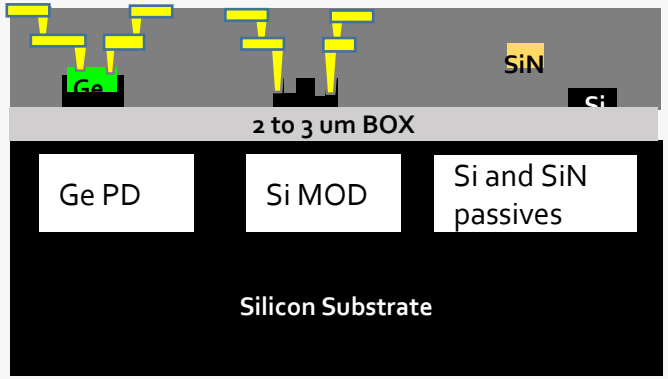
AUGMENTED SILICON PHOTONICS

Standard Si Photonics

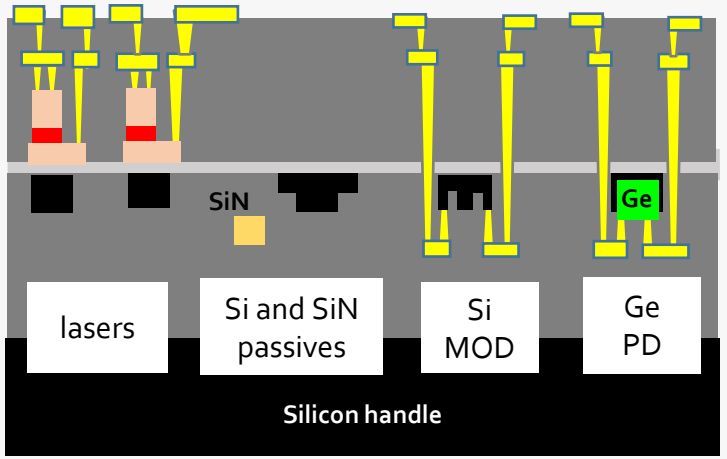
- In production in commercial fabs



Modulators, photodetectors, passives, tunable

SCINTIL augmented Si Photonics with integration of III-V on Si

- Leverage standard silicon photonics platform



Integrated lasers and amplifiers (SOAs), modulators, photodetectors, passives

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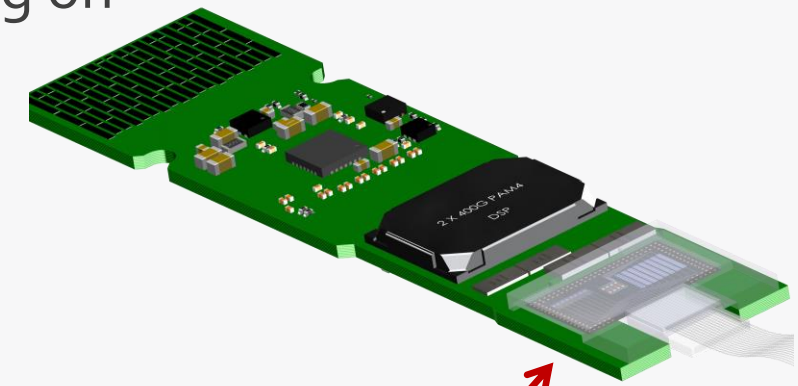
WHAT WE DELIVER

- Evaluation board to assess the performance of our PICs
- Reference design implementation for the target applications including
  - Firmware electronics controls running on standard the MCU
  - Interface with standard high-speed electronic IC (drivers and TIA)
  - Patented fiber attachment scheme
- PIC for mass-production



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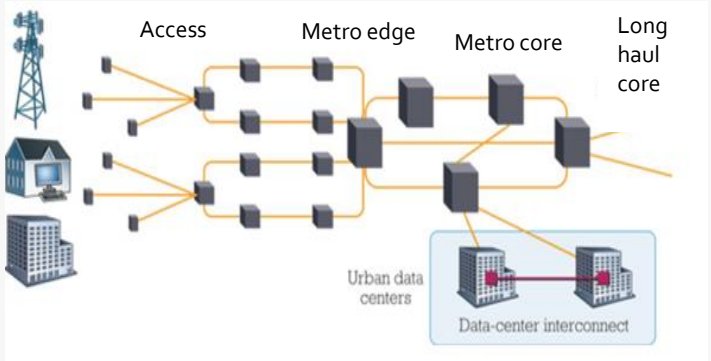
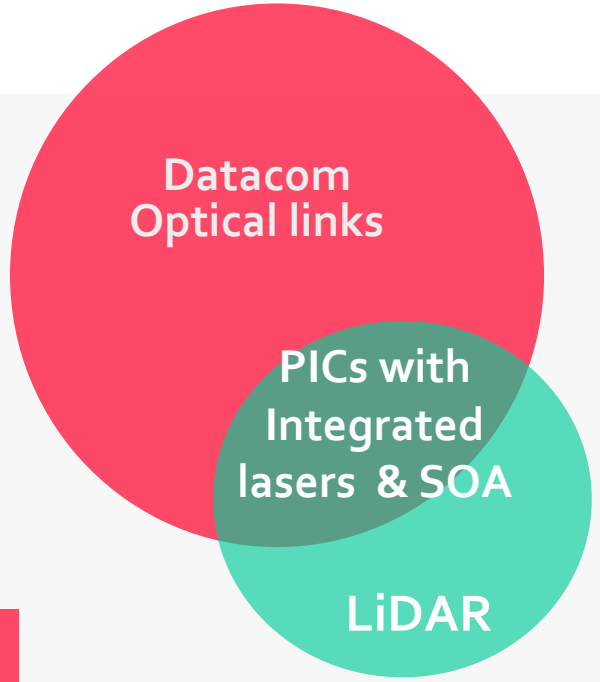
TARGET MARKETS

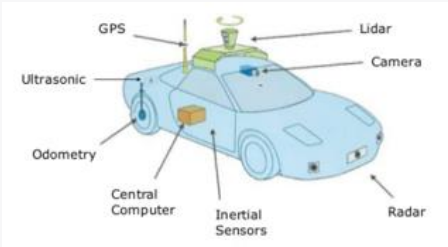
Optical Connectivity



$13.6B
by 2026
25% CAGR
(Yole 2021)



3D Sensing



$3.3B
for ADAS, Robotics & manufacturing market by 2026
(Yole 2021)

Data Center
High Performance Computing

Other opportunities:
- 5G front haul

2) FMCW LIDAR applications
Self driving cars, Robotic & Manufacturing

Other opportunities:
- Quantum photonics for QKD

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WHAT DO WE LOOK FOR

- QD EPI
- 90GHz/120Gbaud quad or octal modulator drivers

We are hiring !

contact@scintil-photonics.com

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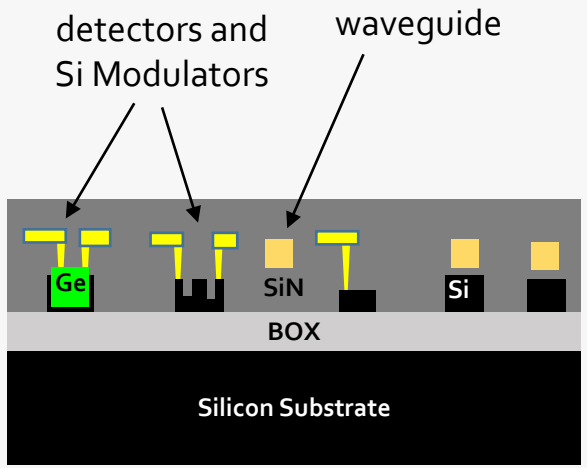
"BackSideOn-BOX" PROCESS STEPS

SILICON PHOTONICS STANDARD FAB

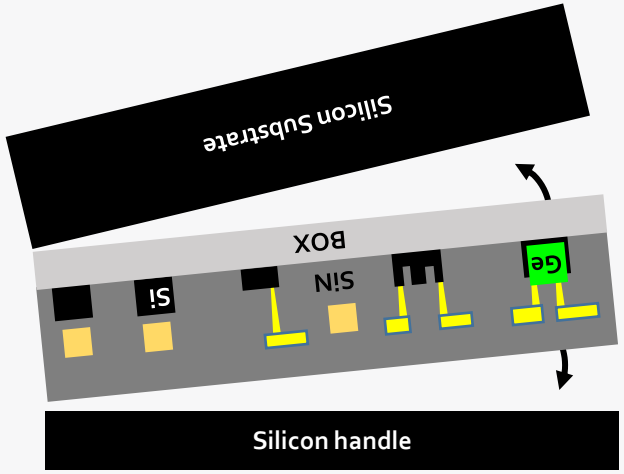
High Speed Ge Photo-detectors and Si Modulators

Low loss SiN waveguide



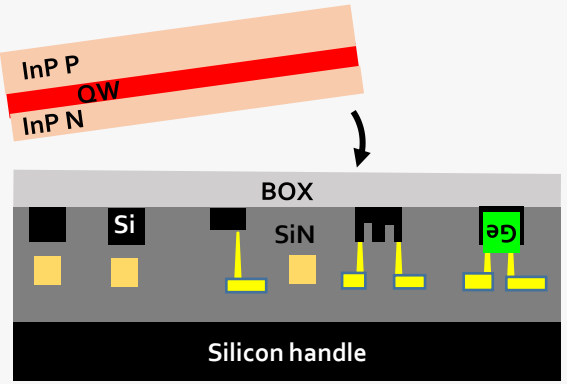
TRANSFER TO SILICON HANDLE

Flip Bonding on a Silicon handle and Removal of the original SOI substrate



BONDING OF NON-PATTERNED III-V MATERIAL

III-V die bonding where lasers are needed (alignment tolerant bonding with high throughput)



PATTERNING OF III-V MATERIAL AT WAFER LEVEL

Patterning of the III-V to form the lasers