

Trends and Perspectives of Silicon Photonics for X-FAB, as specialty foundry in Europe



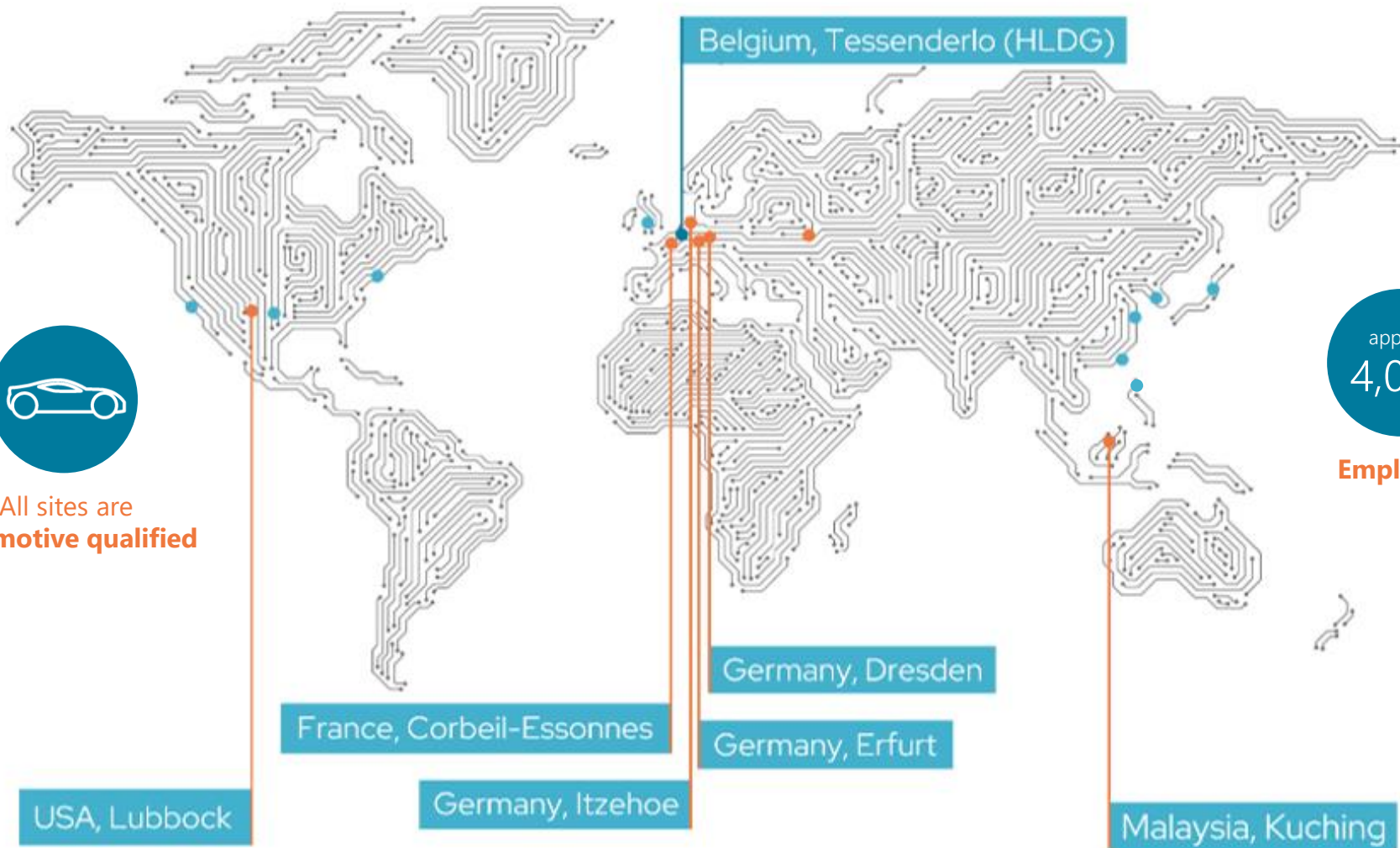
Our Vision

To be the foundry of choice
for the analog world.

Our Mission

Enabling long-lasting success
for all our stakeholders, focusing on
innovative solutions and manufacturing
excellence which meet customer
expectations.

X-FAB at a Glance



6

Manufacturing facilities



All sites are **automotive qualified**

420

Customers in 4 key markets

100,000

Wafer starts per month*

approx. 4,000

Employees

658 million \$

Revenue 2021

- Fabs/subsidiaries
- Sales offices

*200mm equivalent

More than Making Chips



Automotive

We think automotive.

X-FAB provides solutions for safe, efficient, comfortable and connected transportation.

- › Electrification
- › Improved safety
- › ADAS
- › Environmental protection
- › Connected cars and services



Industrial

We empower the future.

X-FAB enables next generation energy management and automation technologies.

- › Power management
- › Factory automation, Industry 4.0
- › Intelligent drive & motor control
- › Smart buildings and cities



Medical

We save lives.

X-FAB enables medical products for diagnostics, therapy and analysis.

- › Personal medical devices
- › Medical equipment
- › Lab-on-a-chip



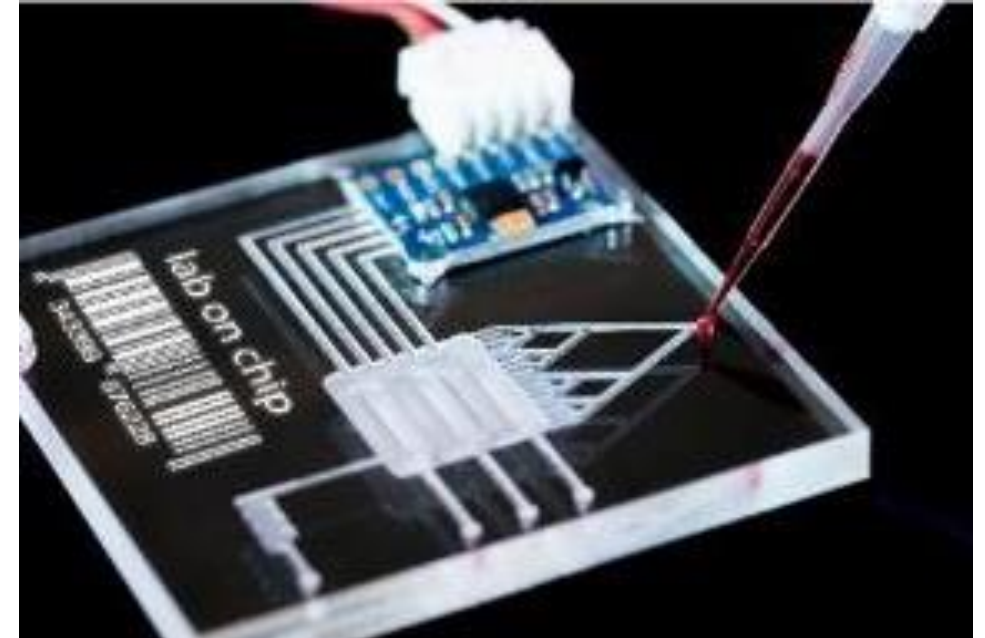
Communication & Consumer

We connect people.

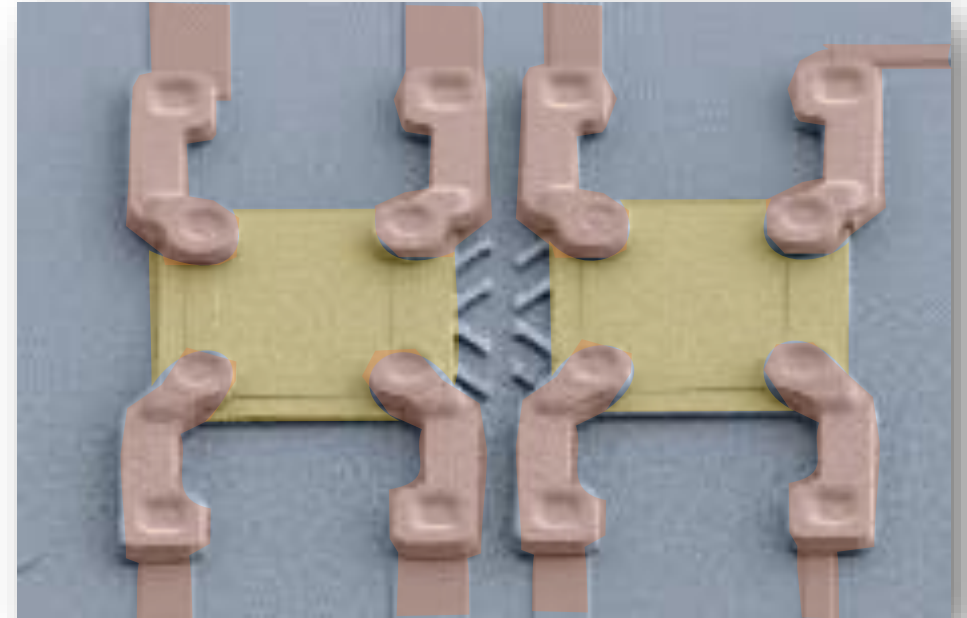
X-FAB technologies integrate seamlessly into your daily life.

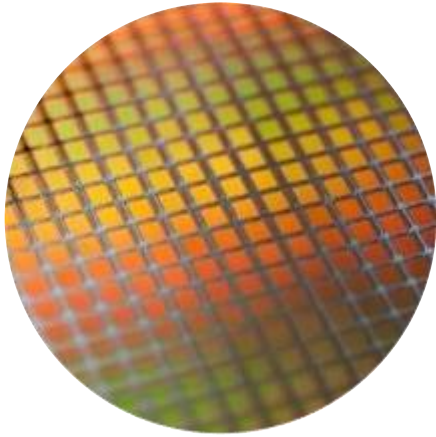
- › Smart home
- › Connectivity
- › Communication
- › Appliances and HVAC

- X-FAB is working with multiple customers directly on a broad range of photonic platforms for different applications
 - Extended CMOS with integrated SiN waveguide for visible light photonics
 - Main application – biomedicine, lab-on-chip, DNA sequencing
 - Mass production in 2022 after 5 years of joined R&D
 - Low-loss SiN passive photonics platform in cooperation with Ligentec
 - Application-agnostic platform that is most suitable for quantum computing, sensing (LIDAR), biomedicine and telecommunication applications
 - On-going support of prototyping activities, mass production to follow
 - Silicon photonics platform
 - NIR for close-range telecommunication applications, photonic interposer, biomedicine
 - Currently at feasibility stage, main building blocks/optical components
 - Exotic materials integration for improved photonic performance



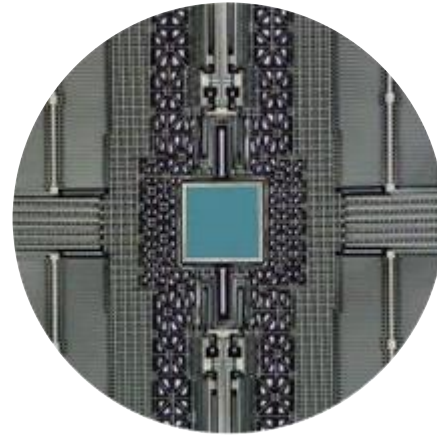
- X-FAB has experience in heterogeneous integration and access to different technologies that enable a unique photonic platform solution tailored for specific applications requirements:
 - Micro Transfer-Printing
 - Massive parallel and accurate transfer of active photonic and electronic components from different materials (III-V, piezo, etc.) to a photonic wafer
 - MEMS
 - Implementation of opto-mechanical devices
 - couplers, optical filters, switches, tuners
 - Post-processing of photonic and hybrid wafers, including deep etching, noble metals RDL
 - 2.5/3D Integration
 - Integrated Microfluidics





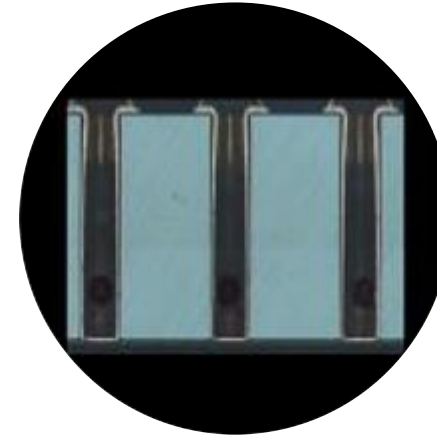
CMOS & SOI

13 process families with over 450 options



MEMS

MEMS with or without integrated CMOS



Heterogeneous integration

3D integration and wafer level package solutions



SiC & GaN

First 6-inch SiC foundry offering worldwide

- Silicon Photonics is the next logical step for X-FAB technology portfolio
- Fabrication, ecosystem and know-how located in Europe, X-FAB already cooperates with multiple customers from Europe and around the world
- Could be expanded, accelerated to the next industrial stage with EU support

xfab

Thank you.



www.xfab.com