

MANUFACTURING MADE LIGHT

Solutions for integrated photonics. Built to scale.

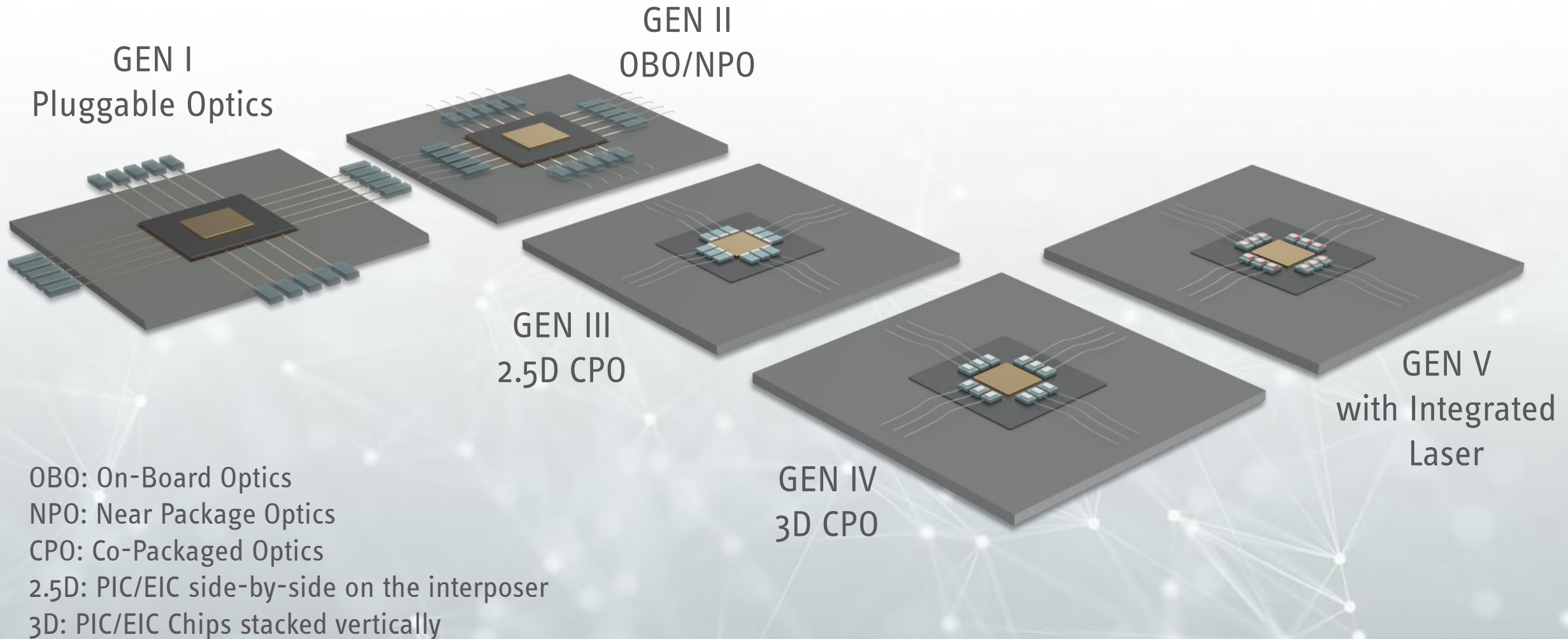
Unlocking 3D CPO with the industry's first fully automated double-sided electro optical wafer prober

21 October 2025

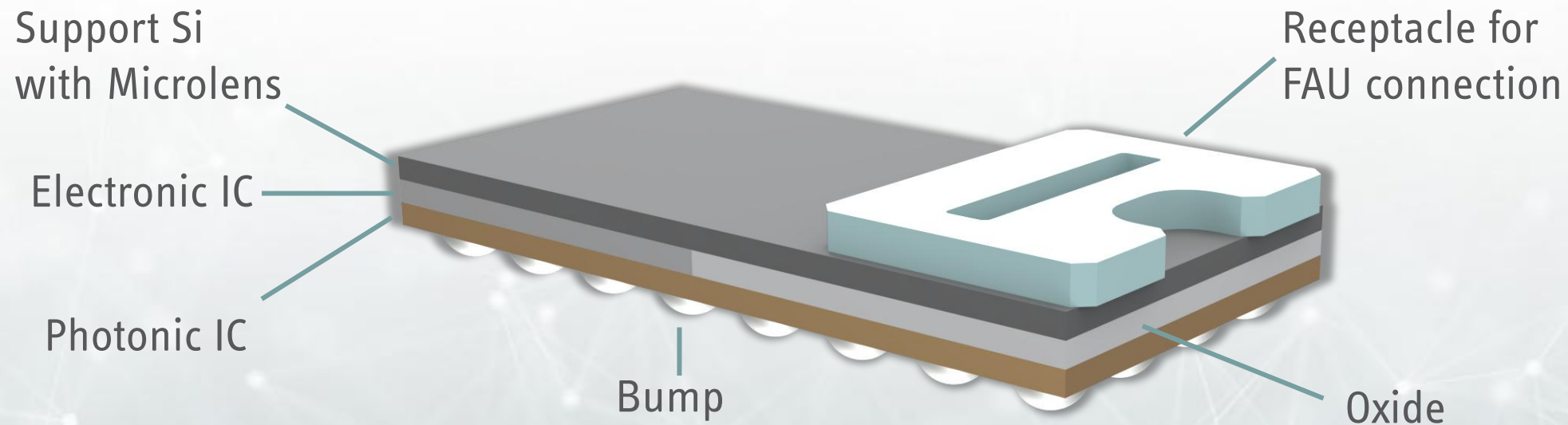
Dr. Sung-Hoon Im

Product Management Director, ficonTEC

Generations of Optical Datacom

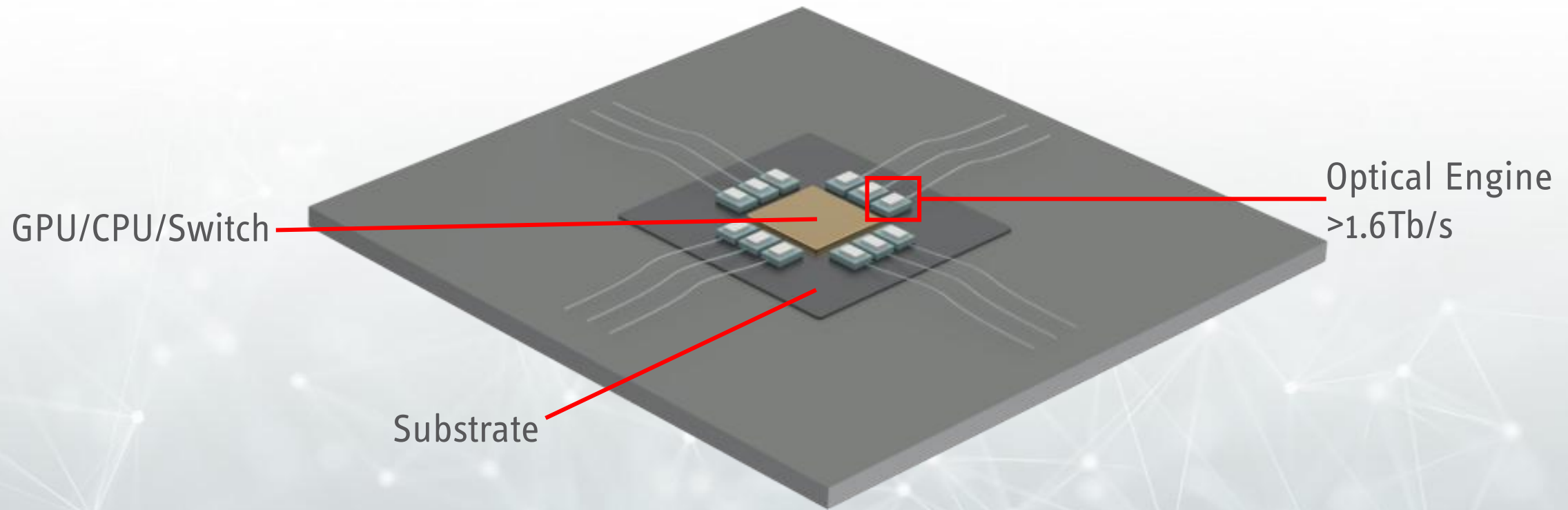


Double Sided Optical Engine



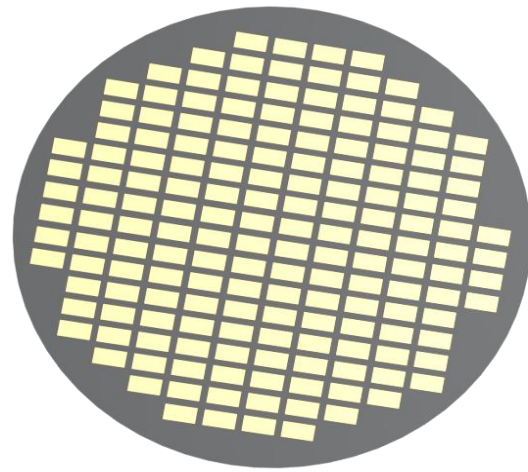
An optical transceiver of 15mm x 10mm size!

3D CPO for AI Data Centres



>20Tb/s of throughput per GPU/CPU/Switch

How an Optical Engine is Made



PIC wafer
~800um thickness



Wafer Thinning

~100um thickness PIC wafer

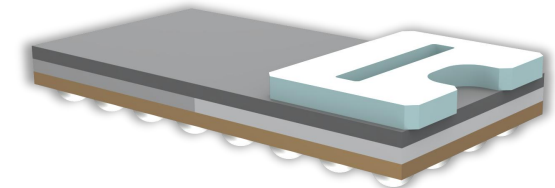


EIC attach Hybridization

~800um COUPE wafer

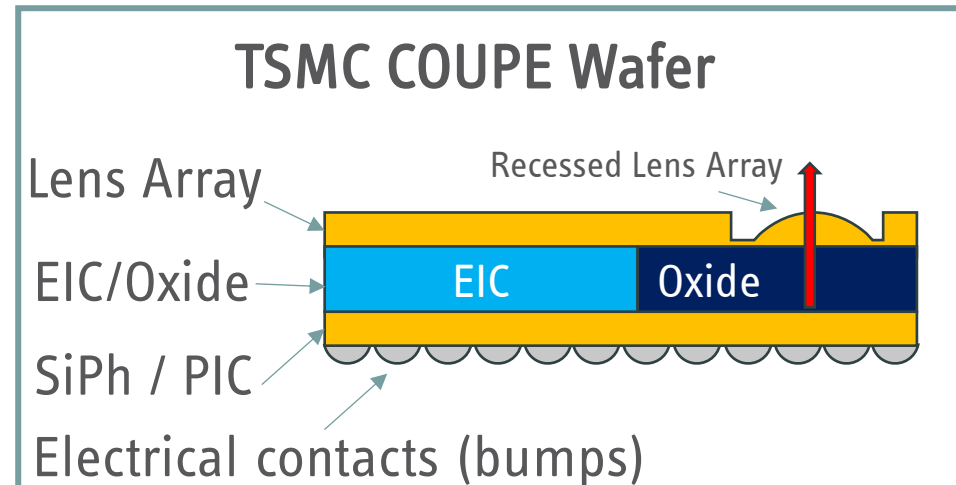


Wafer cutting



Optical Engine - Singulated Die

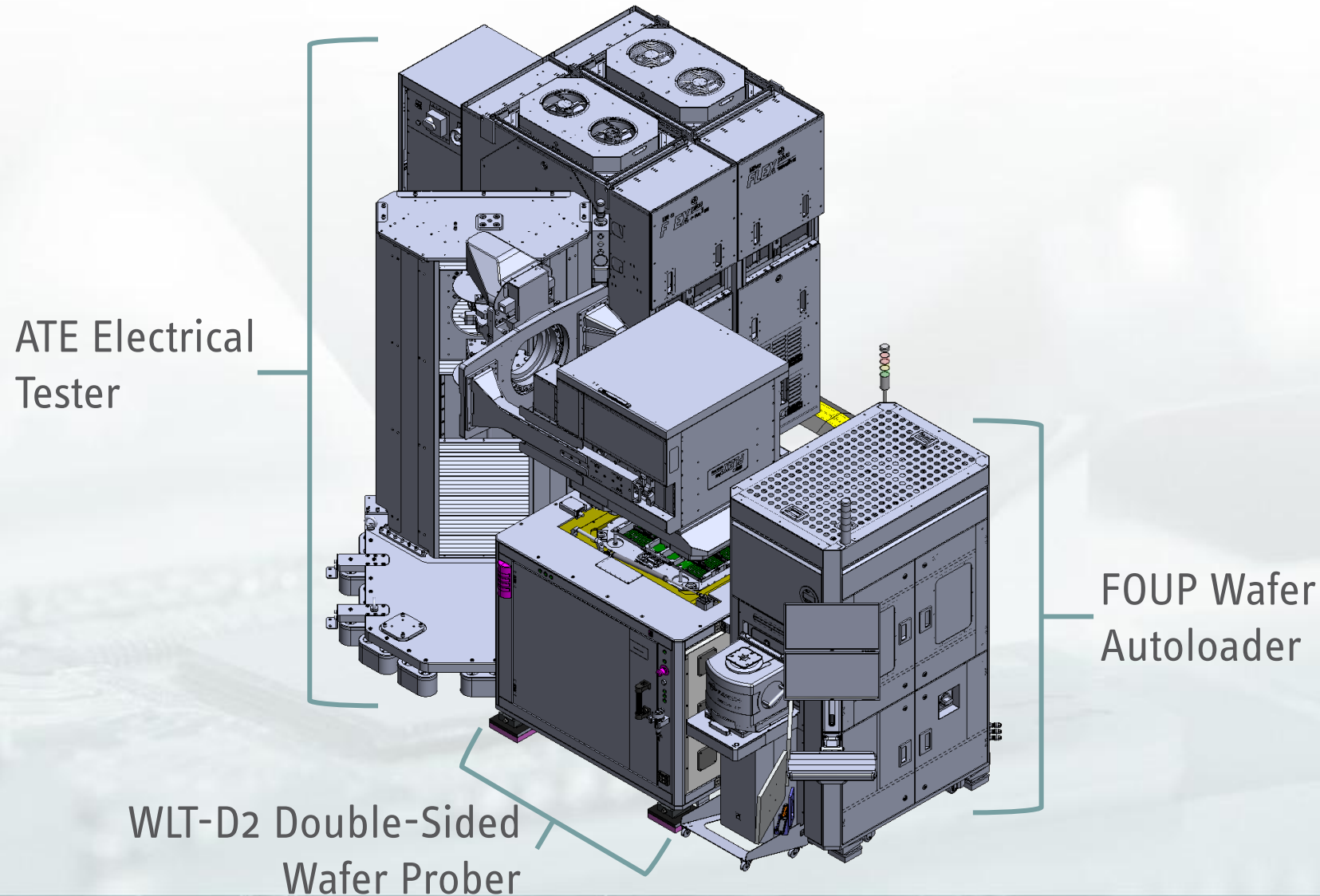
EIC - Electrical Integrated Circuit
SiPh - Silicon Photonics
PIC - Photonics IC
COUPE - Compact Universal Photonic Engine



WLT-D2: HVM Double Sided Testing

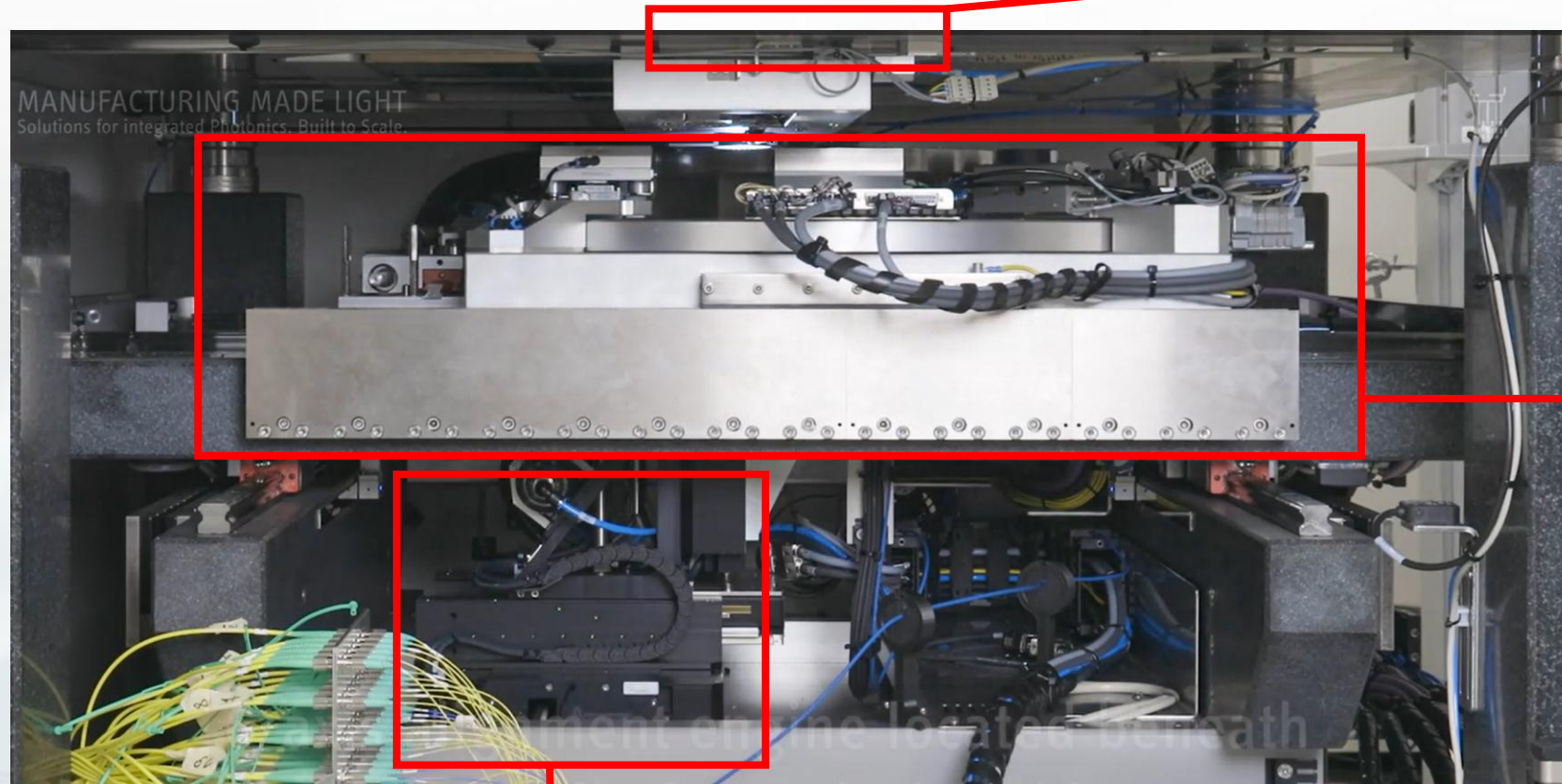


WLT-D2 with Wafer Autoloader



Inside the Prober

Probecard, Stationary



Wafer table with
4-axis motion

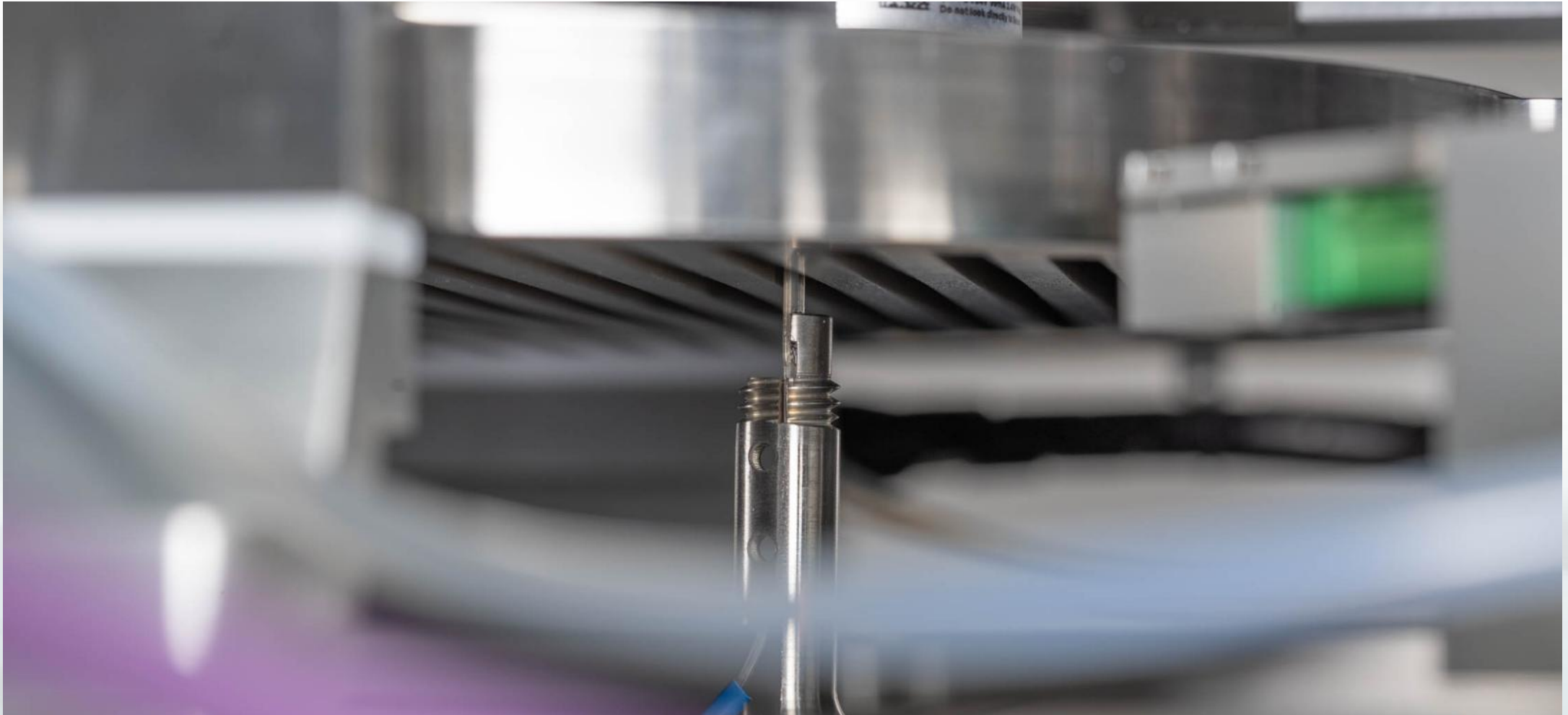
6-axis Optical Probe
Alignment Engine



NEW
DEVELOPMENT

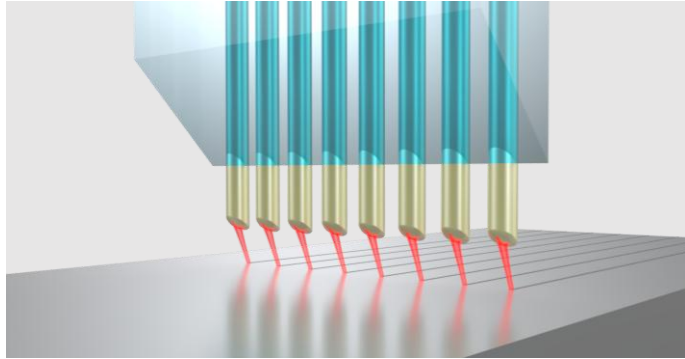
DOUBLE SIDED E/O WAFER TESTER

Key Technology: Wafer Chuck and FAU

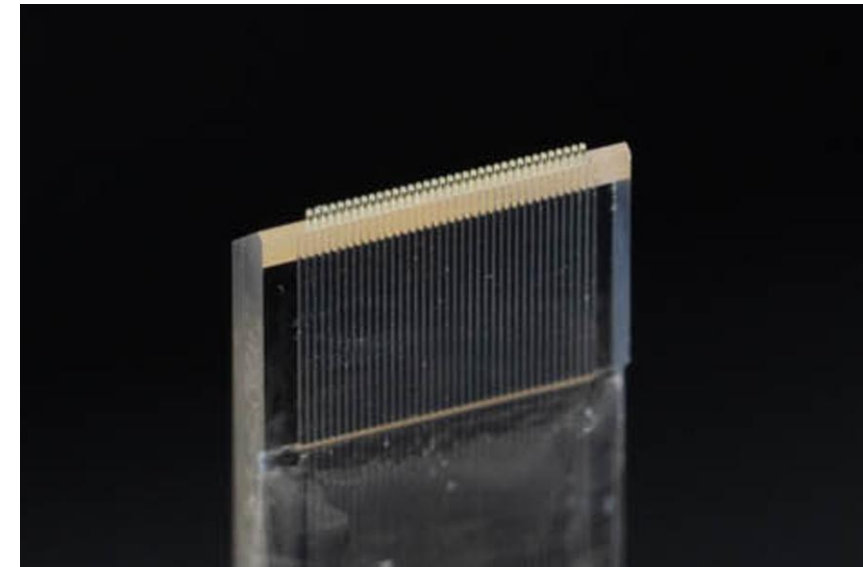


Optical Probe Technologies

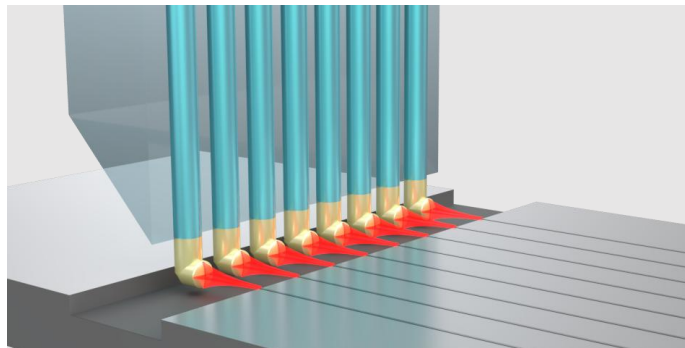
Grating / Surface coupling



3D printed lenses on the FAU
 collimate and bend the beam angle

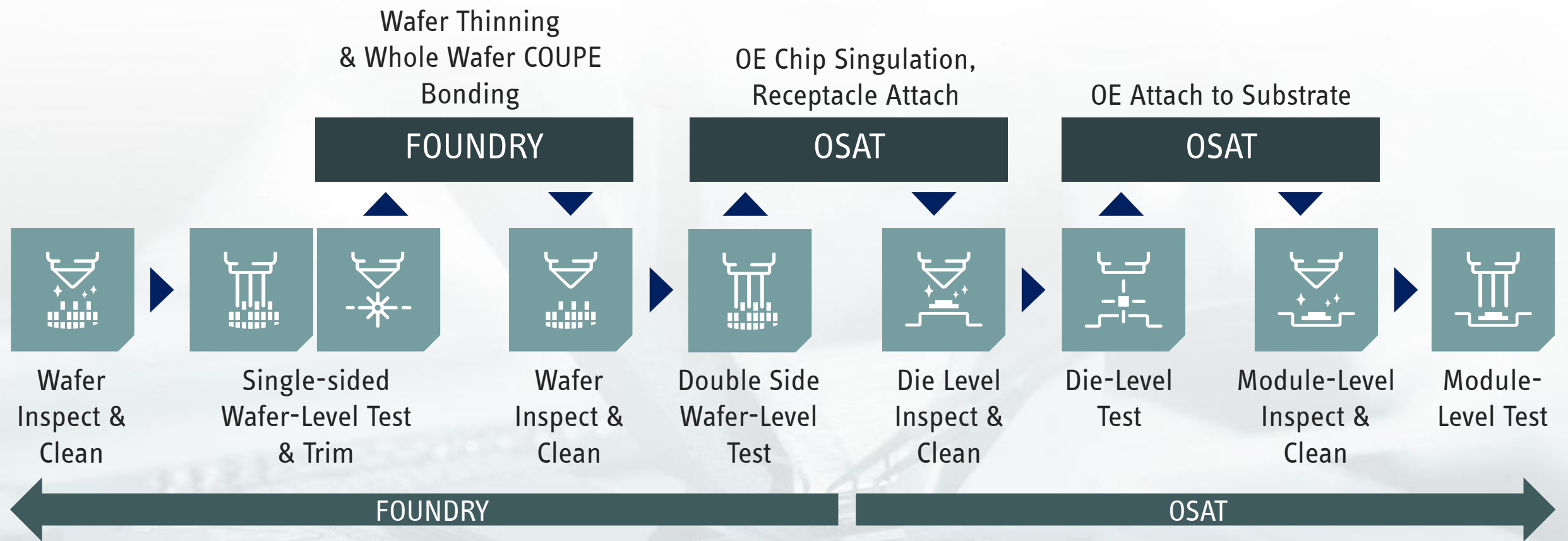


Edge / Trench coupling



3D printed periscopes on the FAU
 reflect the light for horizontal coupling

ficonTEC Ecosystem Test Flow



OE – Optical Engine
 OSAT – Outsourced Semiconductor Assembly and Test

Inspect, Clean and Profile Technology Partners
FEMTO & **zygo**



Wafer-level 3D CPO Testing is now possible with WLT-D2