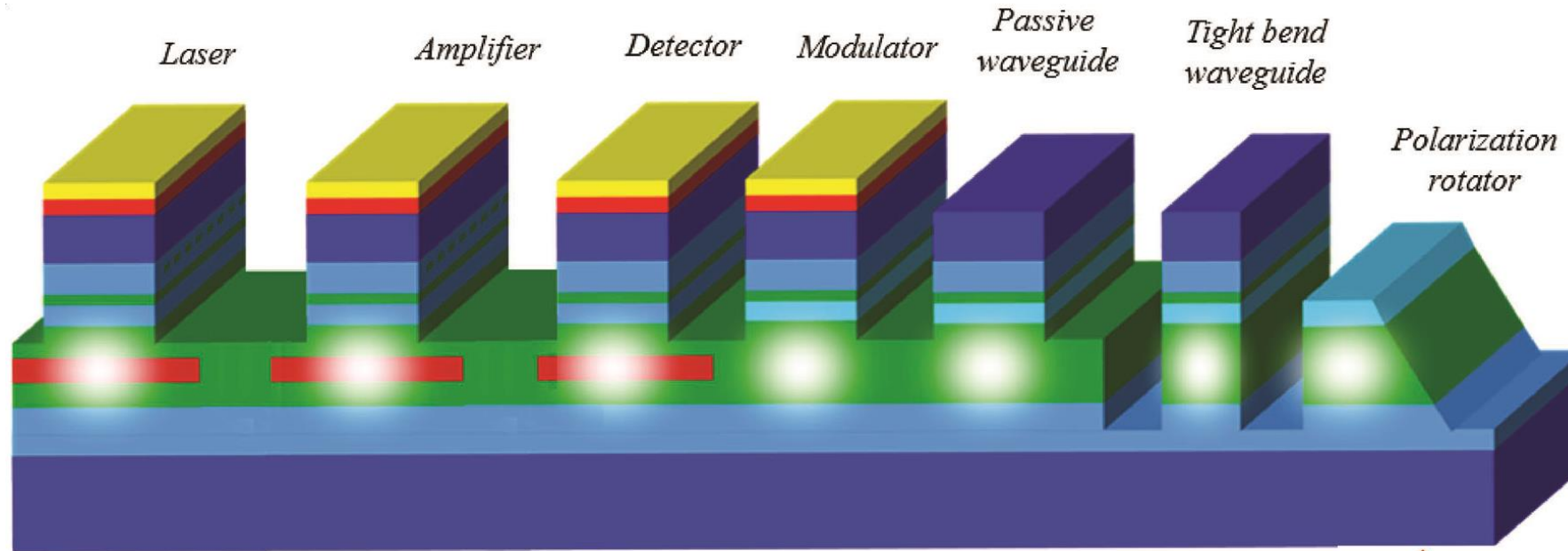


Scaling up InP PIC Foundry Production

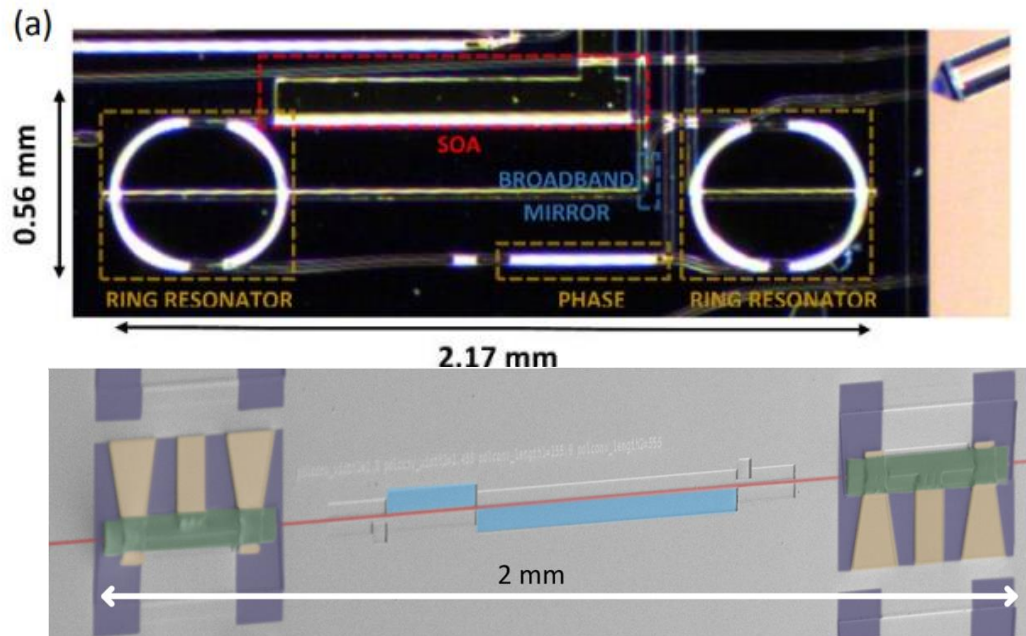
Kevin Williams

Complete set of building blocks



The **no compromise, open photonic integration** platform
Native lasers, amplifiers, MQW modulators, InGaAs detectors
Multiplexers, combiners, hybrids and polarization rotators

High performance photonics

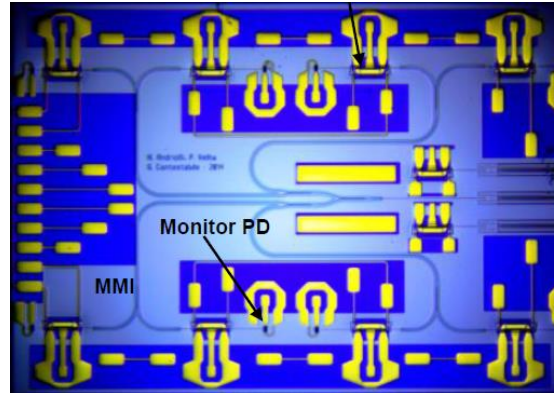


Native lasers, amplifier, wide tunable lasers, precision 193nm lithography
Polarization control through rotators and fast phase modulation for C-band
Modulators beyond 50GHz bandwidth with QCSE

Technology impact



Low cost
size, weight,
and power



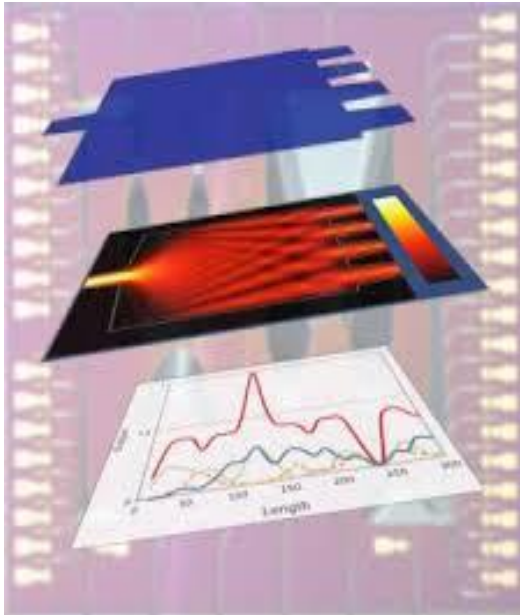
Energy-efficient
high-bandwidth
communication



Versatile
customisable
light sources

Integration density
for next gen
computation

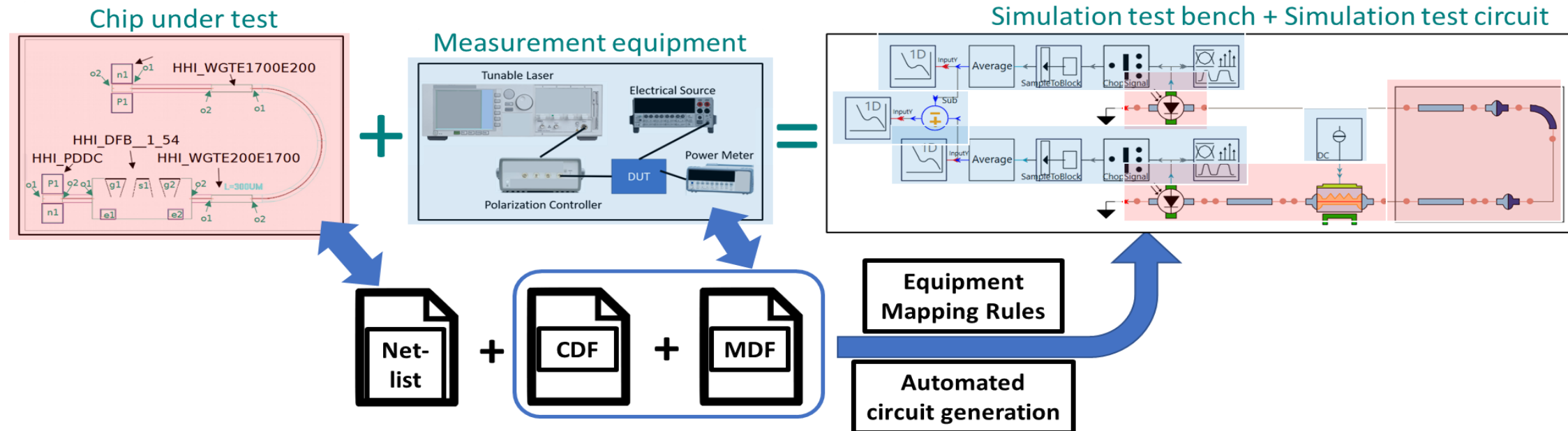
Manufacturing grade PDKs



Manufacturing-grade process design kits

- DoE support for fabrication tolerancing
- Measurement-driven model calibration
- Automated checking of design kits
- Backward compliance on platform
- Pre-testing within design tools
- Fab-ready layout generation
- Professional design services

Virtual test benches



Full software description for chips and measurement systems, and interoperability allowing same scripts to drive design and measurement

Pre-test formats compatible for design, layout and (automated) test

Methods supported across the supply chain

Pre-qualified manufacturing



Generic foundry technology

- No process NRE
- Systematically improved reproducibility
- Systematically improved building blocks
- Process maturity and capability driven by multiple product lines
- High performance on-demand
- Structured approach to reach manufacturability for new circuit designs

Automated test

Test program development for production

- Automated die handling
- Automated fibre and probe align
- Automated die recognition
- Built into design flow

Improving process and product

- Statistical data collection feeding into process control
- Enabling yield learning for the design



It works!



“NVIDIA is collaborating with JePPIX to validate InP PICs as a premium performance communication technology and to explore routes to widespread deployment at 800Gb/s and beyond”,

- Paraskevas Bakopoulos,
Sr. Staff Engineer at NVIDIA



“Our products are used in harsh environments for a variety of applications, including aerospace, mobility, and medical. For us, reliability of these chips are vital. We rely on InP PIC chips of the Pilot Line with which we already have a yield of more than 80%”,

- Rolf Evenblij, Program Manager at PhotonFirst

Commercial account managers



Fraunhofer HHI



Bright Photonics



VLC Photonics



Smart Photonics

One bilateral contract between commercial supplier and developer

Accredited account manager for full JePPIX supply chain

Digital platform enabling developer to track workflow across supply chain

Commercial supply chain



JePPIX partners including the InPulse and OIP4NWE 4" manufacturing pilot line partners