

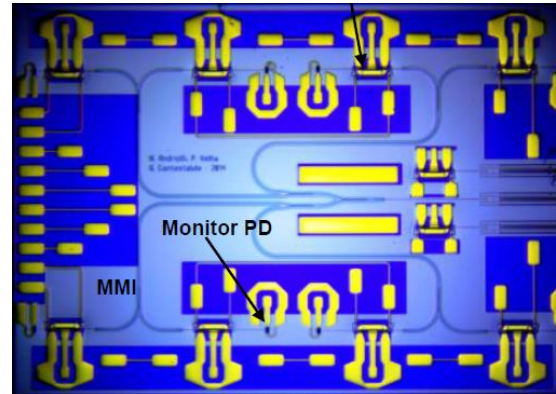


# Indium Phosphide PICs Technology Advancements and Pilot Line Offering

Stefano Aina, Commercial Director, SMART Photonics

January 25<sup>th</sup>, 2022  
SPIE Photonics West

# InP integrated photonics



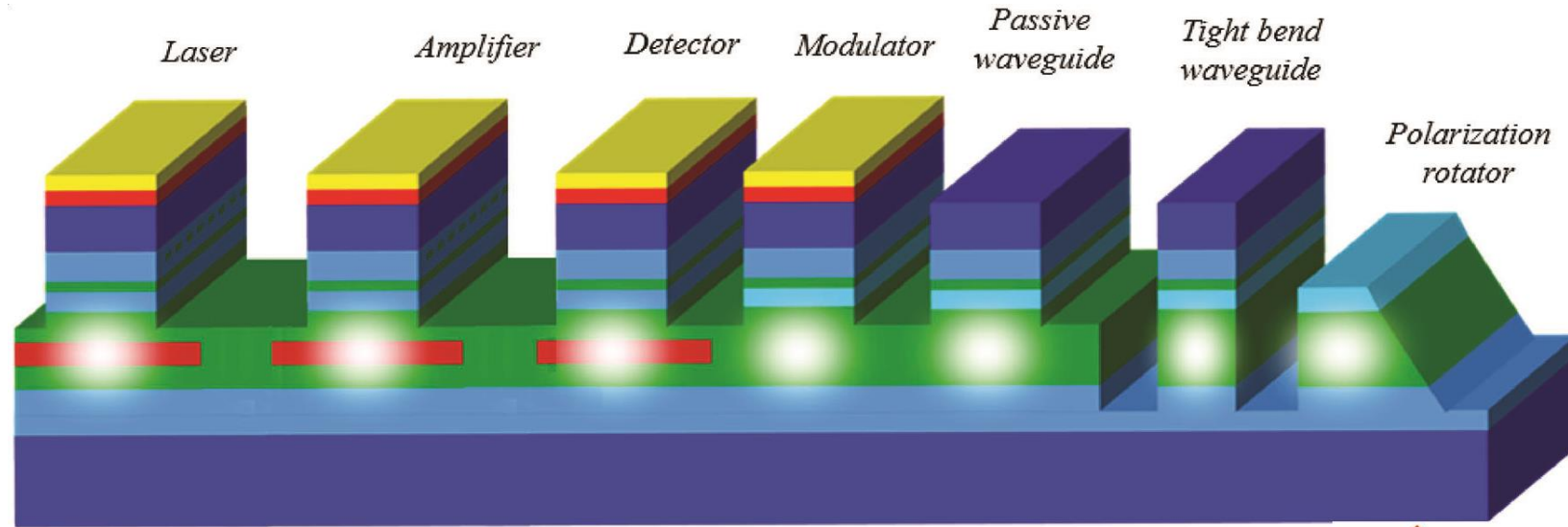
Low cost  
size, weight,  
and power

Energy-efficient  
high-bandwidth  
communication

Versatile  
customisable  
light sources

Integration density  
for next gen  
computation

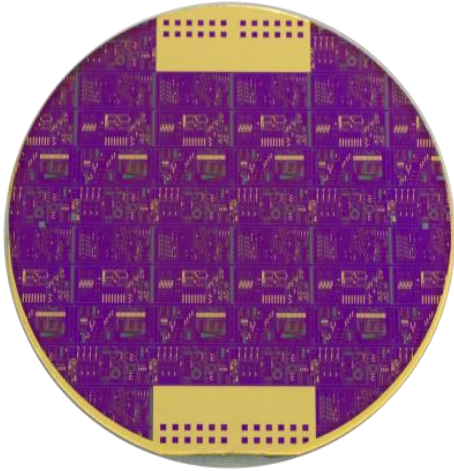
# Essential building blocks **inside**



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



# Route to product



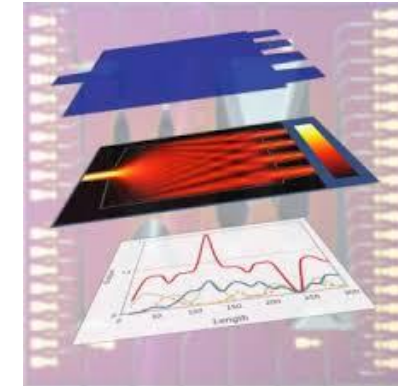
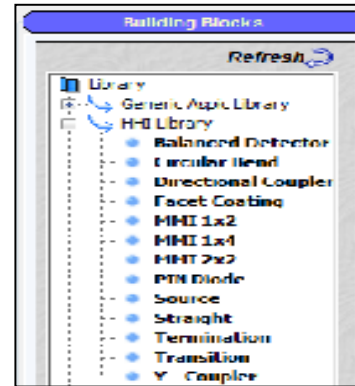
**Indium-Phosphide pilot line**  
For up-scaled, low-barrier, self-sustained PIC ecosystem



Seamlessly from first prototype to **pilot manufacturing** and production  
Fully integrated design, foundry and test processes  
Commercial account manager for industrial supply chain  
MPW as low-barrier entry towards dedicated runs



# Accelerated design



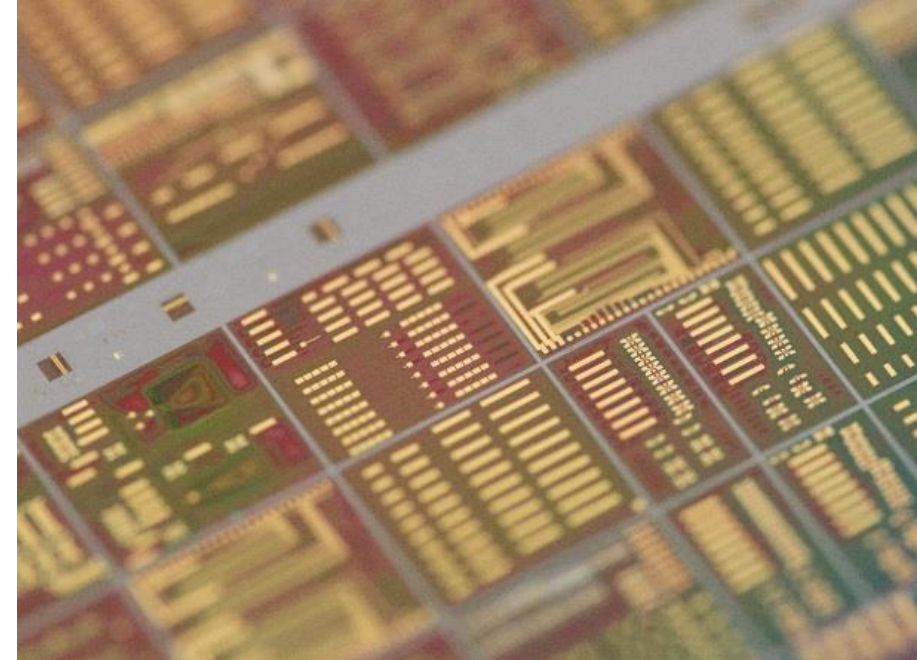
Manufacturing-grade process design kits of Foundry Offer

- tolerances in PDK for manufacturing
- IP blocks for licensed re-use of designs
- automated PDK and design manual creation and validation

# Manufacturing

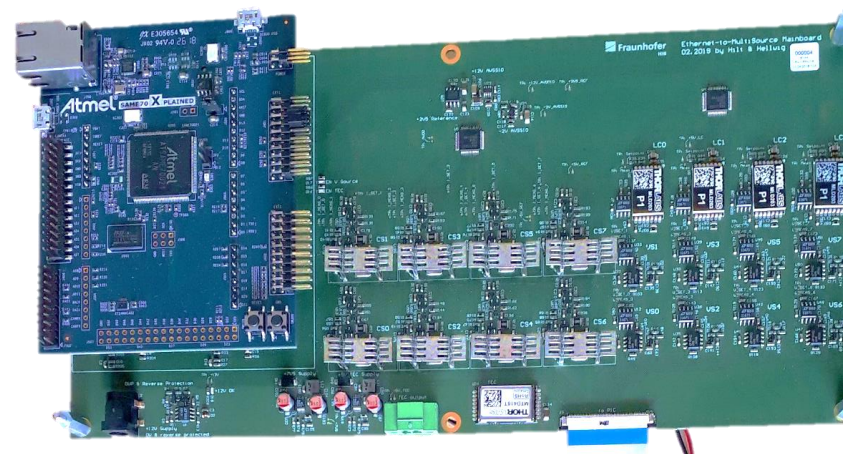
Foundry technology

- **no process NRE**
- systematically improved reproducibility
- systematically improved building block tolerances
- process maturity and capability driven by multiple product lines
- High performance





# Automated testing

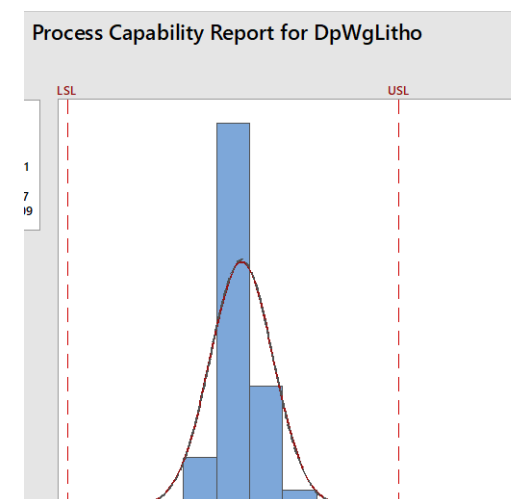
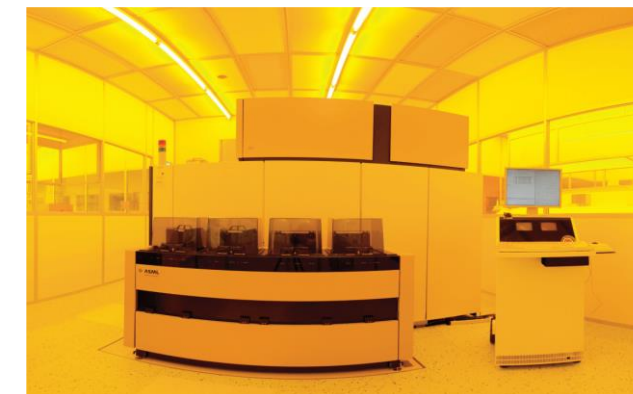
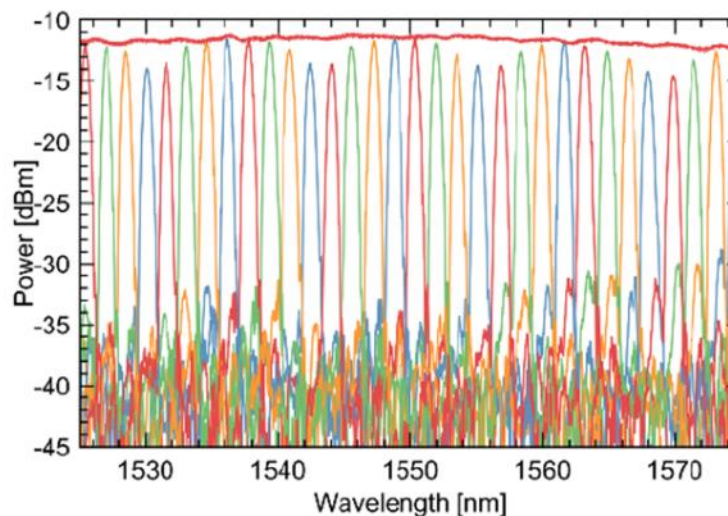
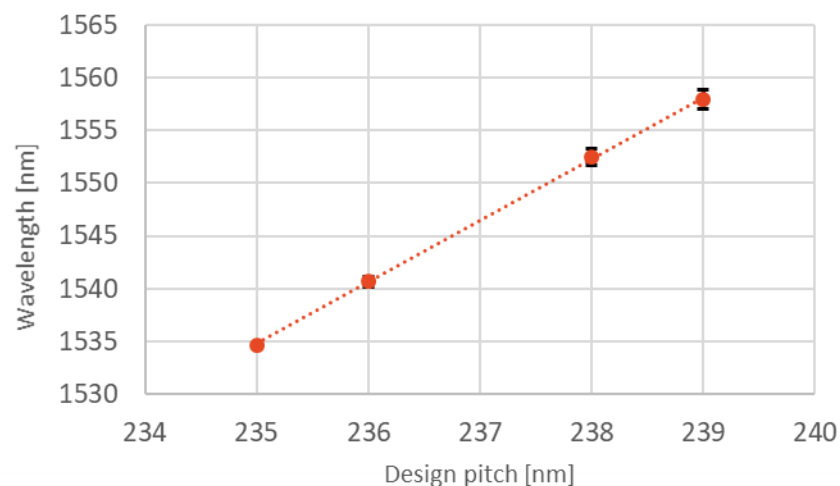


High throughput testing using part handling and automated alignment  
Known-good-die selection  
Test-as-a-service using design phase scripting

# High yield scalable technology

ArF litho: 100nm features

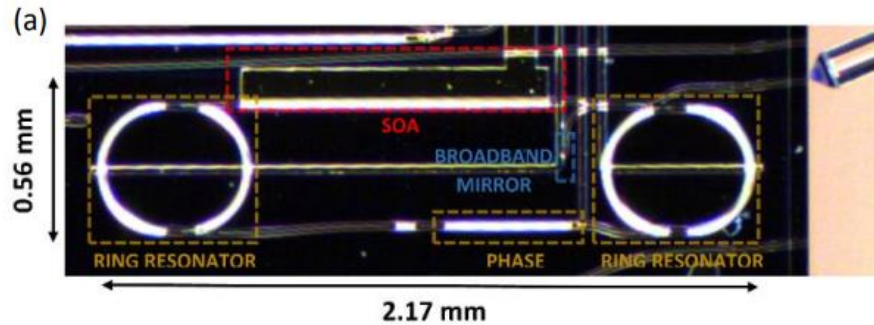
- High throughput
- Excellent reproducibility
- DBR and DFB gratings
- Low loss AWGs



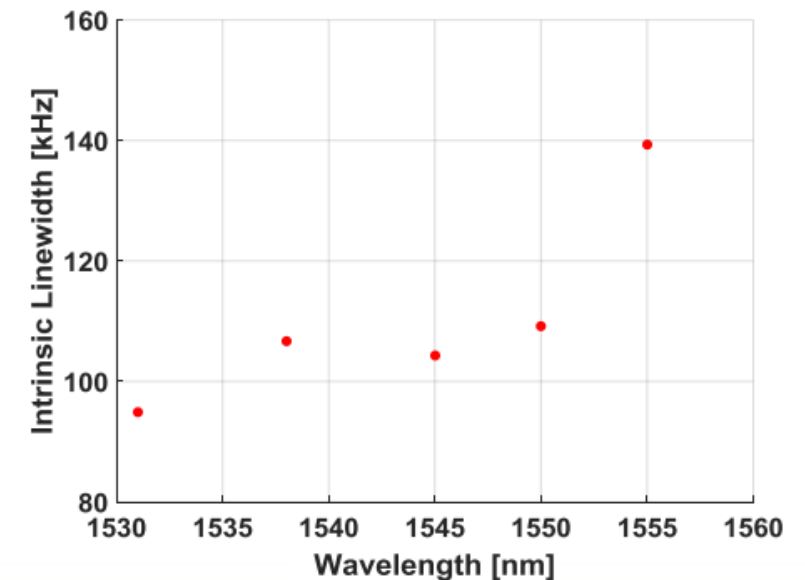
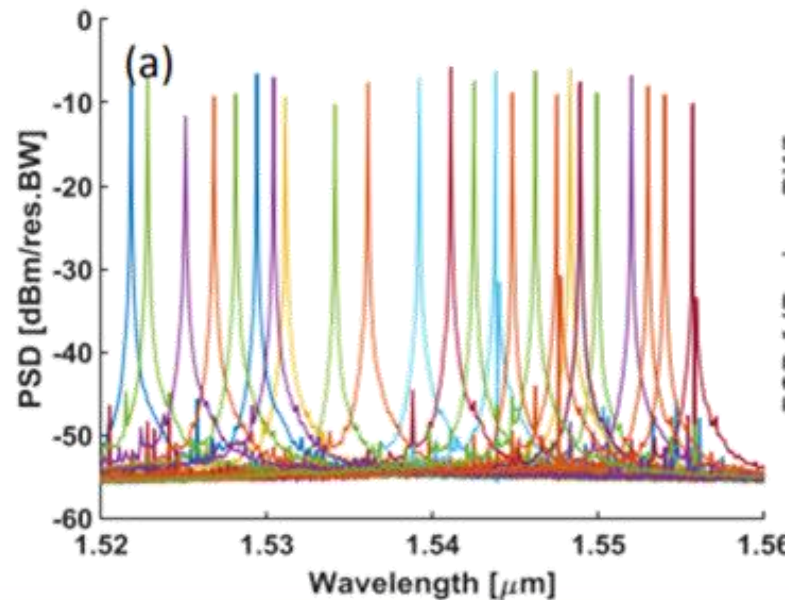
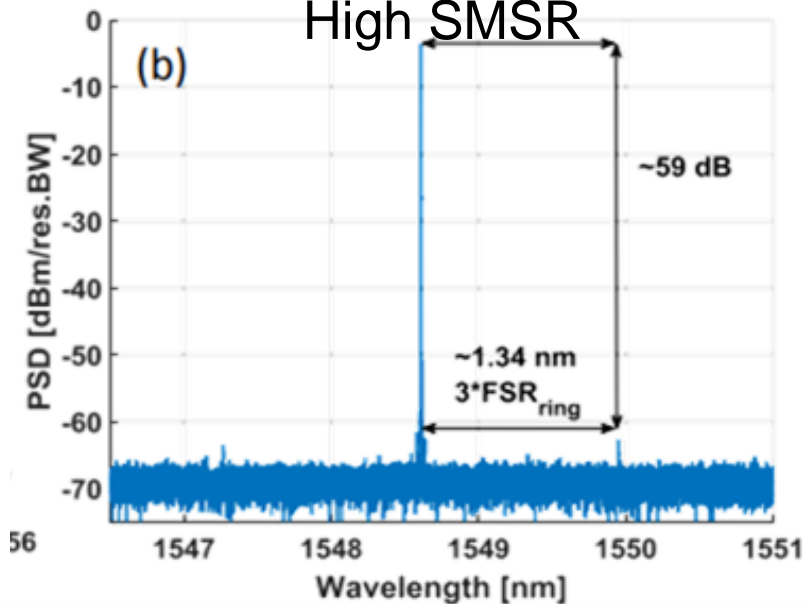


# Widely Tunable laser sources

Wide electro-optic tuning range  
Full band coverage  
Linewidth down to 100kHz



High SMSR



# Launching now

Open access services

Product and service information

[www.jeppix.eu/pilotline](http://www.jeppix.eu/pilotline)

Enquiries

[pilotline@jeppix.eu](mailto:pilotline@jeppix.eu)

Technology capability and roadmap

<https://www.jeppix.eu/knowledge/roadmap/>

