

# Indium-Phosphide pilot line

For up-scaled, low-barrier, self-sustained PIC ecosystem

## Opportunities for microwave photonics

# From prototype to pilot production

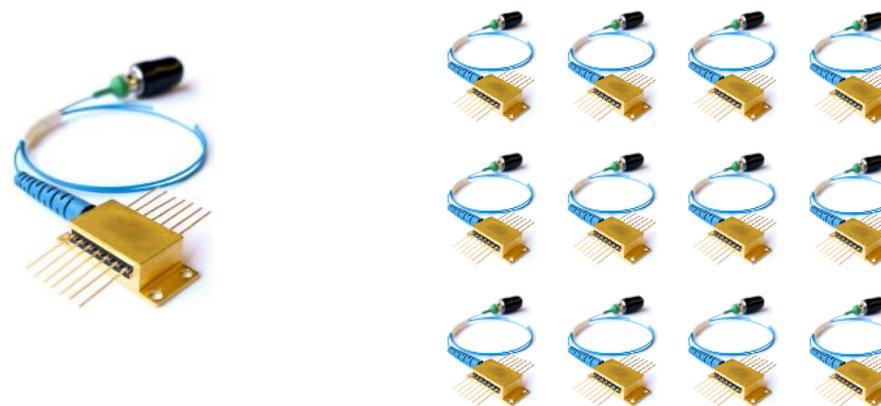
Idea

Research

Prototyping

Piloting

Manufacturing



# The Pilot Line in a nutshell

Generic processes, with many users, generate wafer volume, which leads to a **robust process**

This allows the development of **manufacturing-grade PDKs**, with quantified and narrow variations of key parameters...

... which in turn **reduces the time and cost** to bring an idea from prototype to commercialization

A consortium of leading European players creates **access through MPWs and Pilot Line**

# Opportunities for MWP

## High bandwidth

- Photodiodes 45 GHz;
- Phase modulation 30 GHz;
- Electro-absorption modulation 20 GHz;
- DFB laser modulation 20 GHz

*Inherent to platform*

## High power

- Photodiode arrays;
- Tapered and wide optical amplifiers;
- Tapered laser diodes;
- Wide waveguides for linearity

*Optimize by circuit design*

## Ultra-low loss

- Silicon nitride loss down to 0.1 dB/m;
- with Q-factors >80M;
- Spotsizes-converters for SiN – InP coupling;
- Hybrid packaging

*Hybrid integration with SiN*

The ecosystem is ready to bring IMWP to the market

AMIRÉS *ficONTEC*

TU/e

