

Indium-Phosphide pilot line

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

Opportunities for microwave photonics

From prototype to pilot production

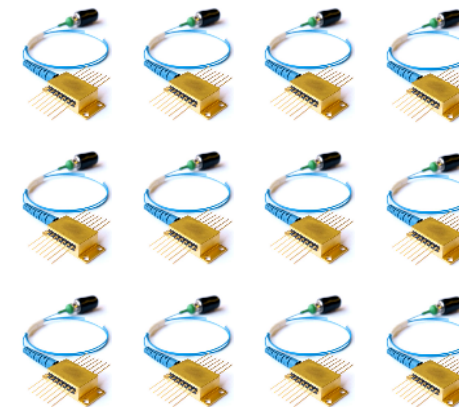
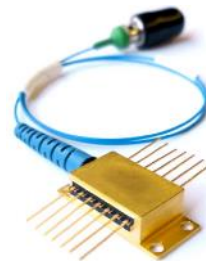
Idea

Research

Prototyping

Piloting

Manufacturing



The Pilot Line in a nutshell

1. Create **manufacturing process design kits** by using smart testing to efficiently collect manufacturing statistics
2. **Increase capacity for open access** industrial prototyping and systematically improve performance of the building blocks
3. Validate the pilot line with two experienced participants to validate and stretch the platform **performance beyond state-of-the-art**
4. Demonstration through tens of external user designs
5. Establish a **sustainable business model** with a resilient industrial ecosystem to ensure continued open-access after four years
6. Support businesses as they scale to volume production

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

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