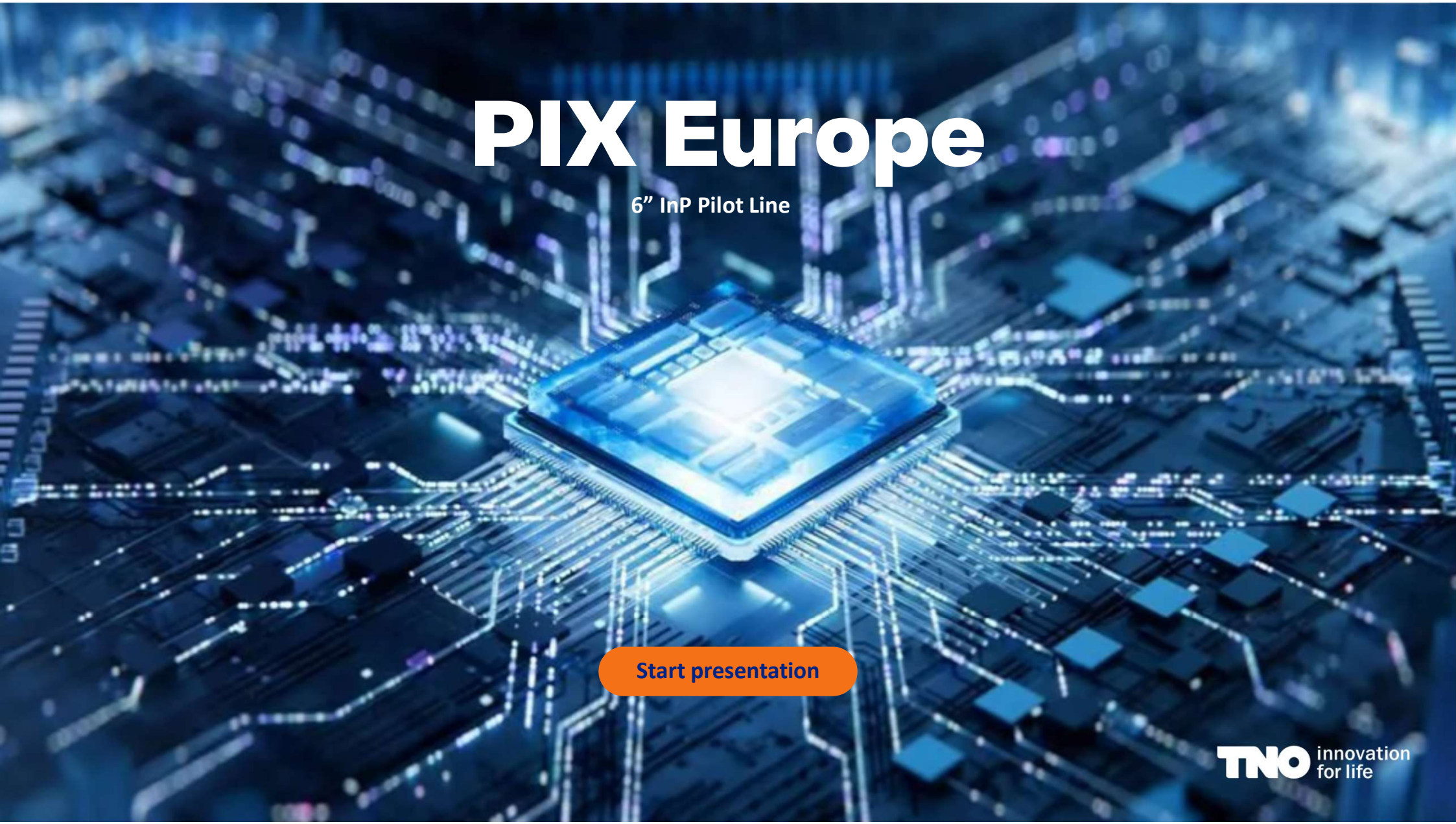
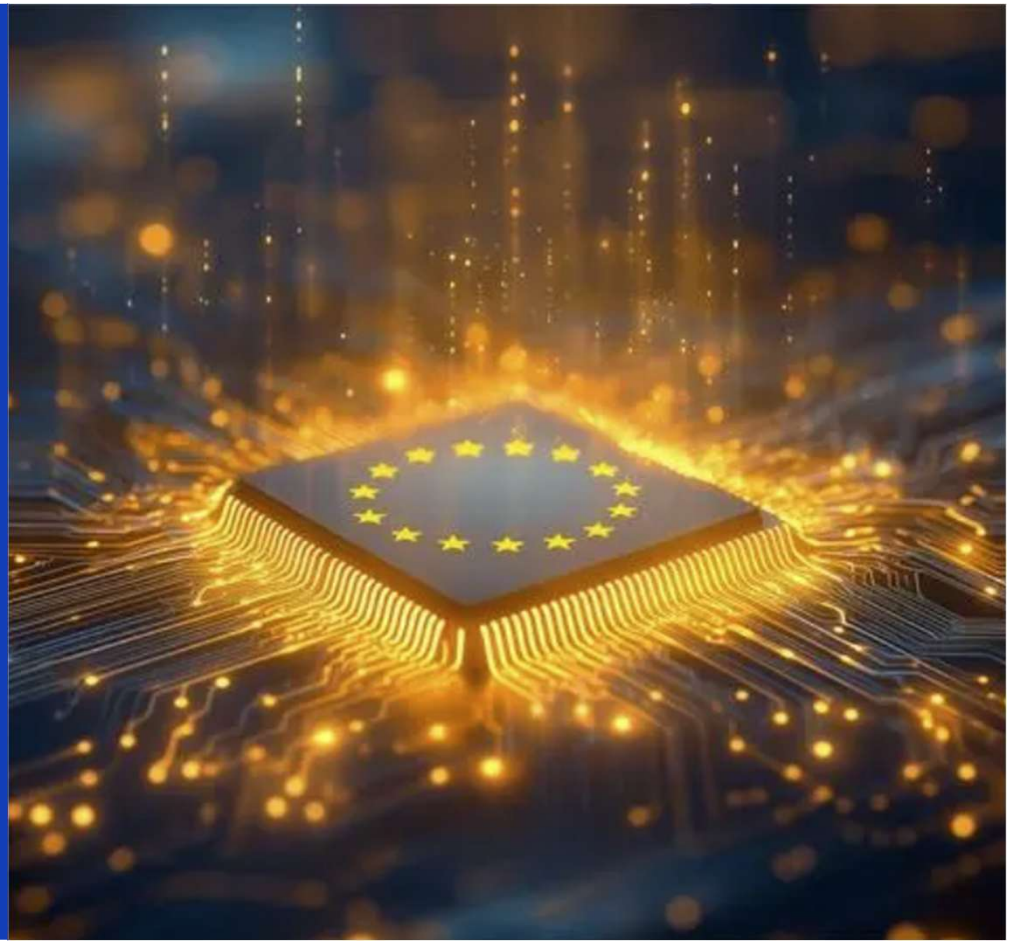

PIX Europe
6” InP Pilot Line
Start presentation
TNO innovation for life

PIX Europe

- Joint European project under Chips-JU (European Chips Act)
- European Pilot Line on Advanced Photonic Integrated Circuits (400M€)
- Collaboration of research institutes from 11 countries to create a network of pilot manufacturing lines



PIX Europe Accelerating the development of photonic integrated circuits

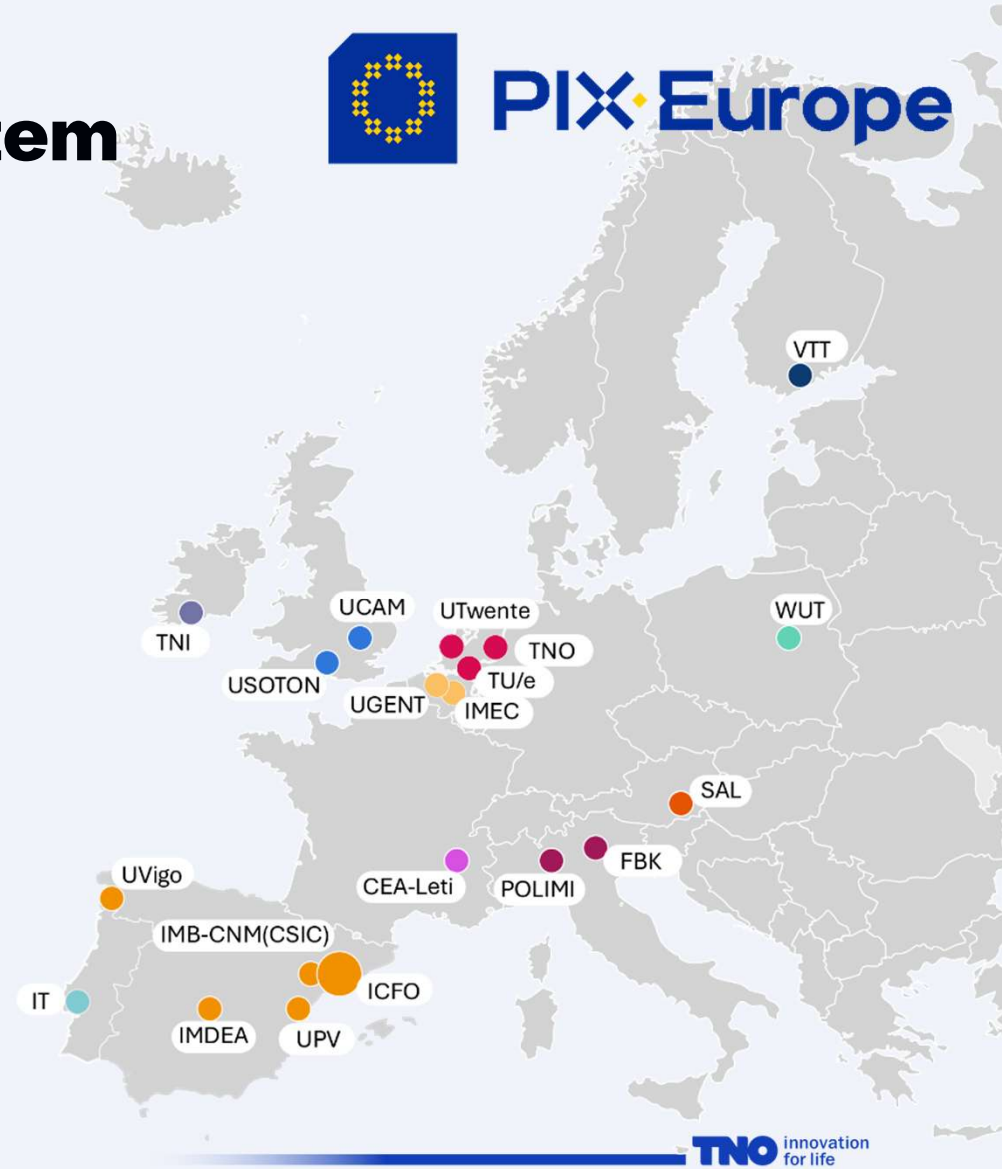
Unique European PIC ecosystem

- Open access PIC pilot line
  - PIC design
  - Monolithic platforms
  - Hybrid integration
  - Packaging
  - Test & Reliability

→

- InP
- Si
- SiN & AlO
- SiC
- Ge on Si

- 20 RTO partners, led by ICFO, Spain
- 11 countries
- ~€400M budget



Our mission

- A new building on HTC Eindhoven
- Housing a new 1650 m^2 ISO 5 cleanroom
- Fully automated, state of the art toolset
- 10.000 wafers/year equivalent to:
  - 10 million complex photonic ICs/year
  - 500 million components/year
- Expandable to 20.000 wafers/year

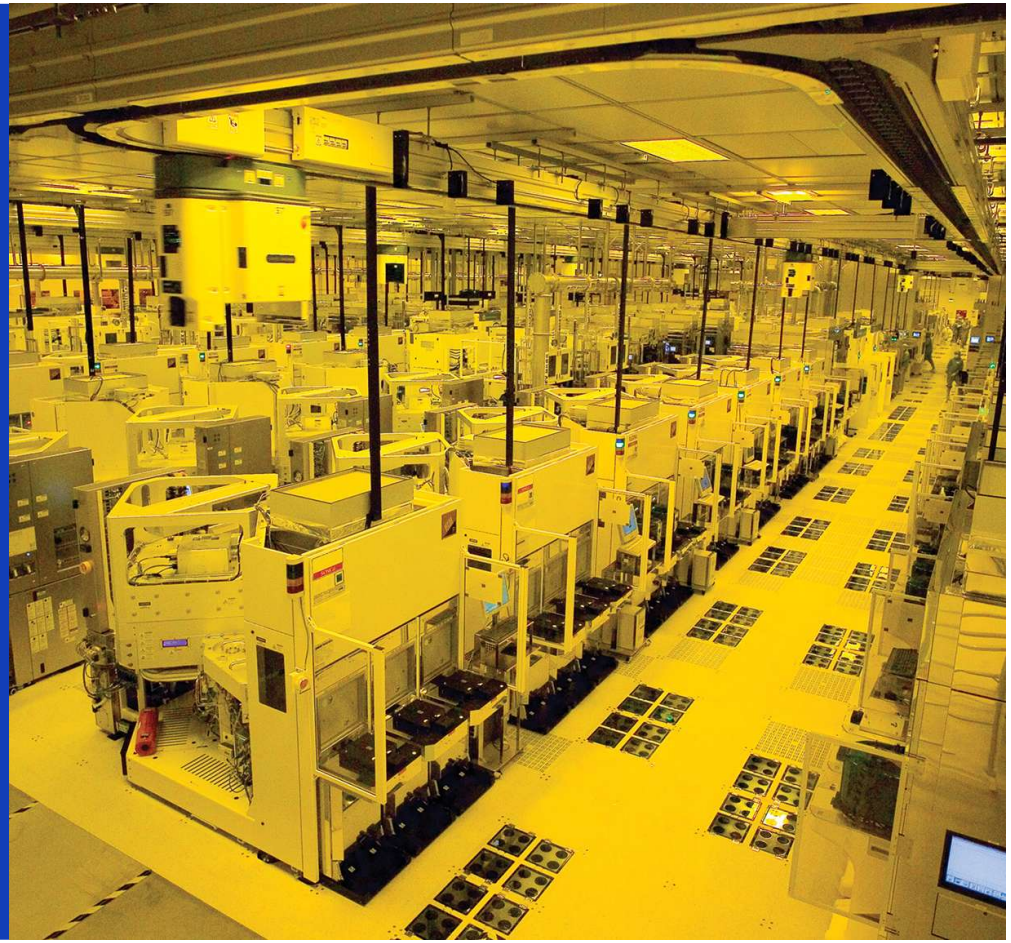
TNO ambition

- Focus on bringing InP-based photonic chip technology from 4” to 6” wafers
- Install fully automated equipment – cassette to cassette processing – with state of the art tools
- Monolithic InP PICs as well as InP chiplets for heterogeneous integration
- Focus on proving process stability and reliability at industrial scale

* Pictures for illustrative purpose only

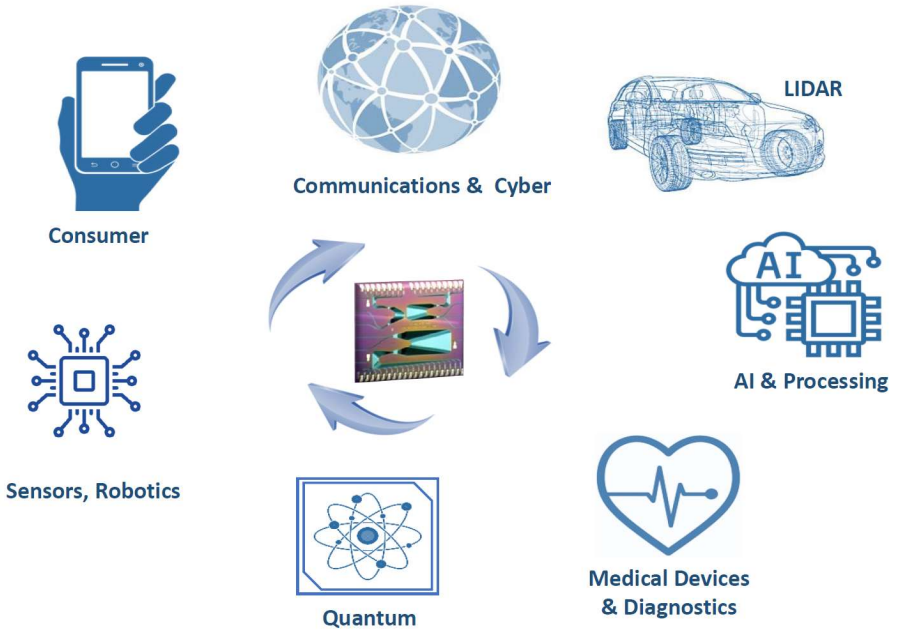
Why?

- Need for scalable, predictable production lines
- Economies of scale: drive down cost to enable more applications
- Economic independence, own strategic control points



* Pictures for illustrative purpose only

What applications?



InP chips are crucial components for many applications

Current world-wide demand driven by AI-datacenters

Demand for InP chips increased 5x since 2022 and expect another 2-3x until 2030

Other applications will benefit from increased volume and lower prices

PIX Europe

Timeline

2025 | 2026 | 2027 | 2028 | 2030

Preparation

- Building design
- Process & equipment specification
- Start tendering

Build

- Building construction
- Equipment procurement

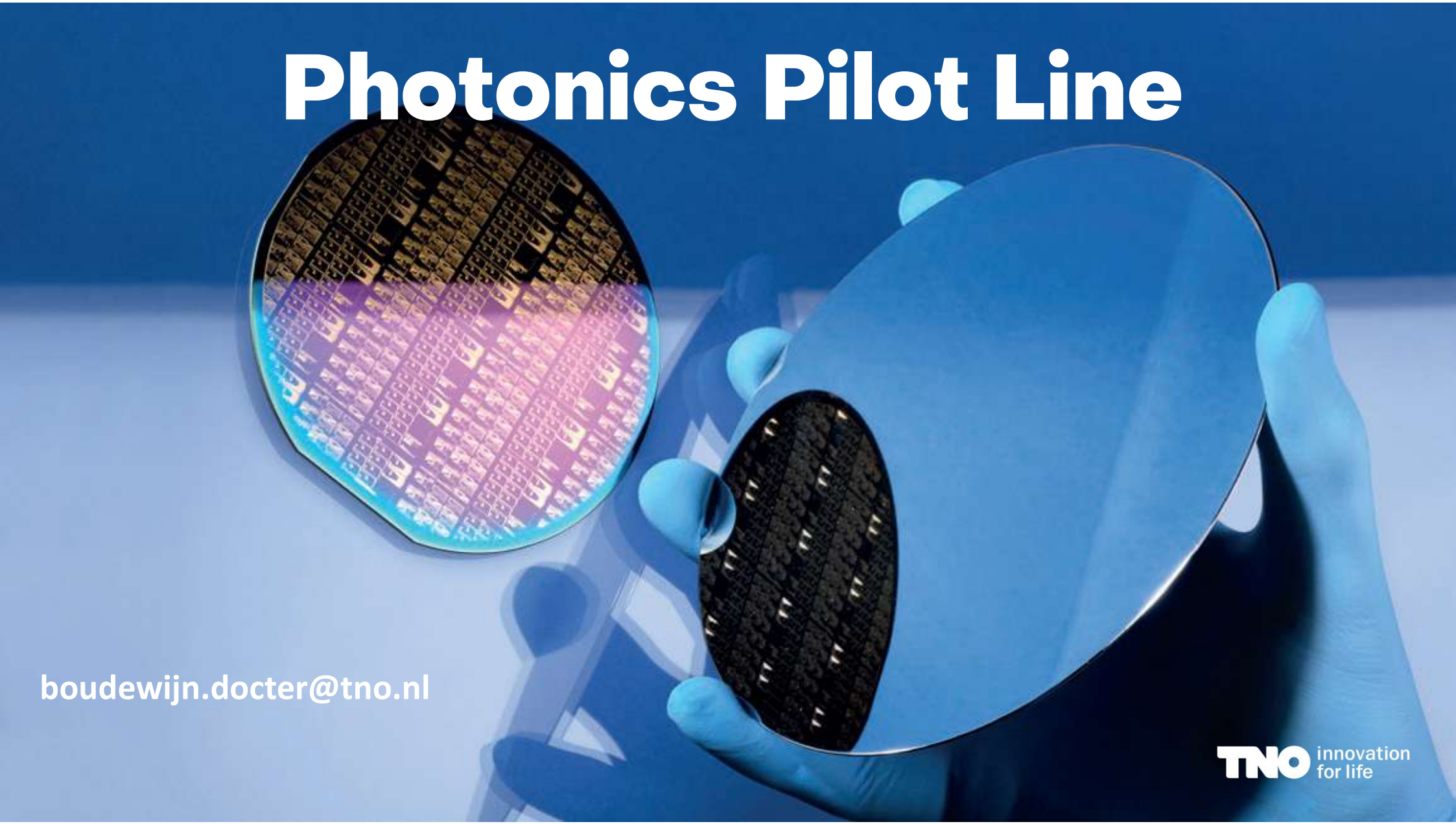
Install & Start-up

- Hook-up equipment
- Setup individual processes

Run & Improve

- Setup end-to-end process flow
- Run qualification batches & gather data
- Failure analysis and continuous yield improvement
- Deliver to consortium partners and external end-users

Photonics Pilot Line



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