



STUDY VISIT AND MATCHMAKING DIGITAL HEALTH



**Industry
Contact
Point**
Medical
Technologies
and Health



**Industry
Contact
Point**
Digital
Transformation



**Industry
Contact
Point**
Industry 4.0



Health

Co-funded by the
European Union



**LOWER
SILESIA**



**DOLNY
ŚLĄSK**

STUDY VISIT AND MATCHMAKING

DIGITAL HEALTH



LightHouse

LightHouse sp. z o.o.

Start-up (Warsaw University of Technology spin-off)

Ryszard Piramidowicz, CEO, co-founder

lighthouse@lighthouse.net.pl

<https://lighthouse.net.pl/>



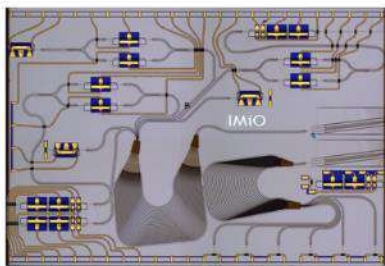
STUDY VISIT AND MATCHMAKING

DIGITAL HEALTH

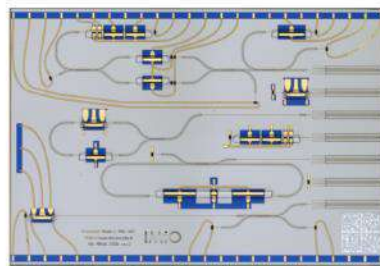


LightHouse benefits from 15+ years of experience of IMiO and CEZAMAT WUT

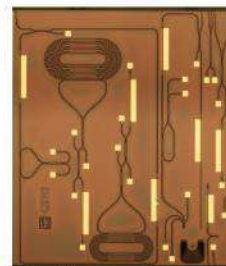
120+ ASPICs designed for InP and SiN platforms



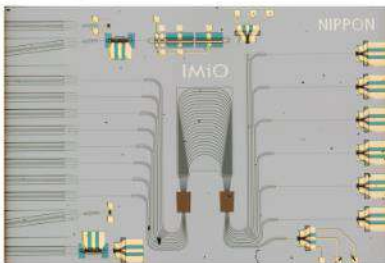
Multi-channel transceiver for free space optics



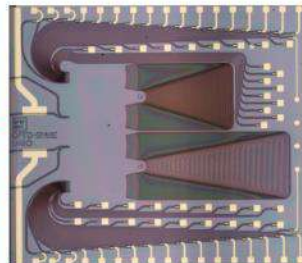
Optical time domain reflectometer



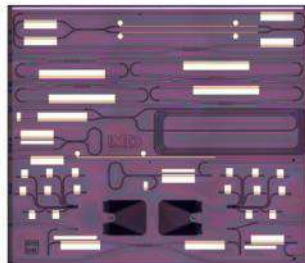
Ring laser gyroscope



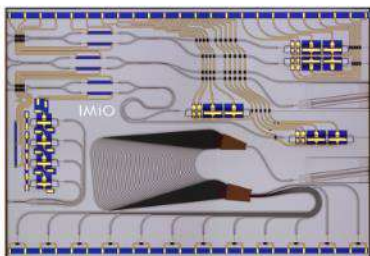
Multi-channel WDM receiver for FTTH networks



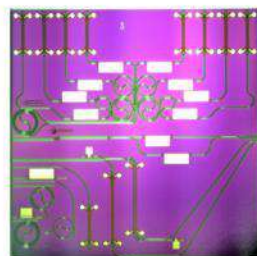
Spectrometer for FBG sensor interrogator



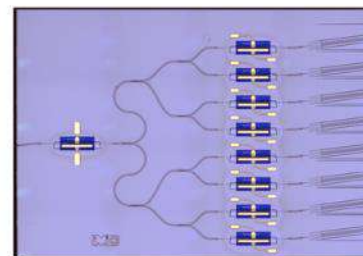
Discretely tunable laser



FBG interrogator unit

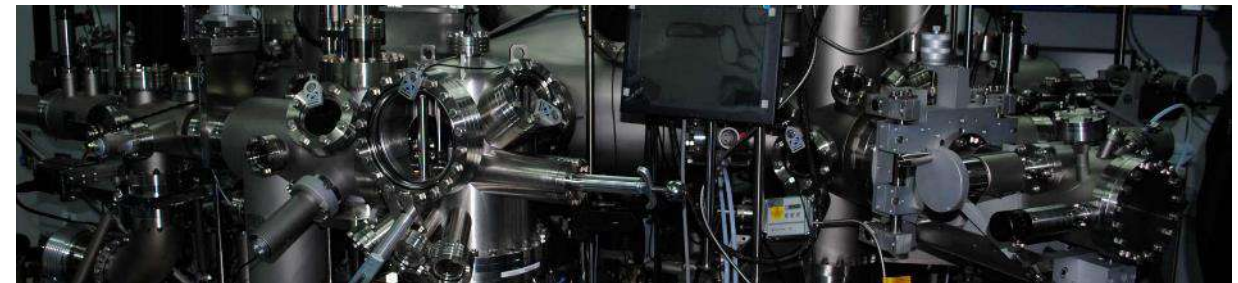


Optical time division multiplexer



Lossless power splitter

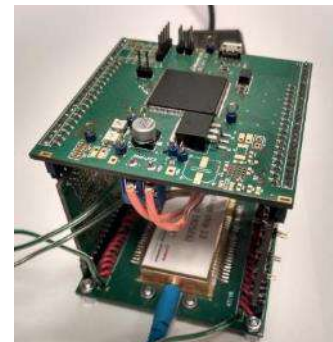
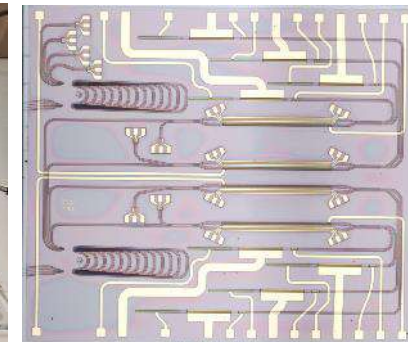
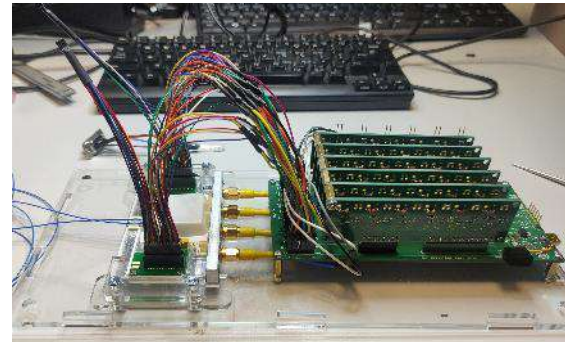
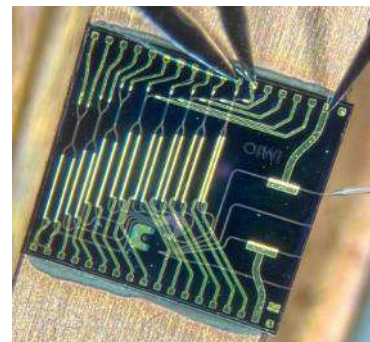
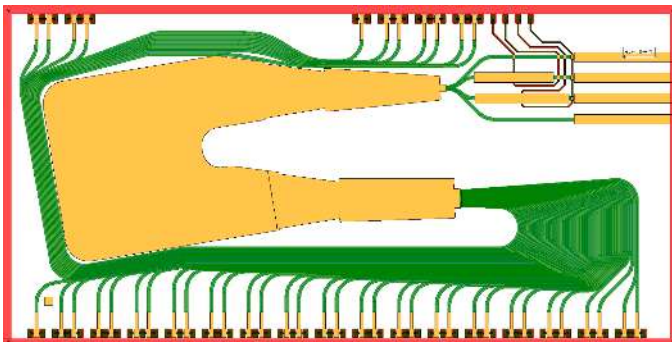
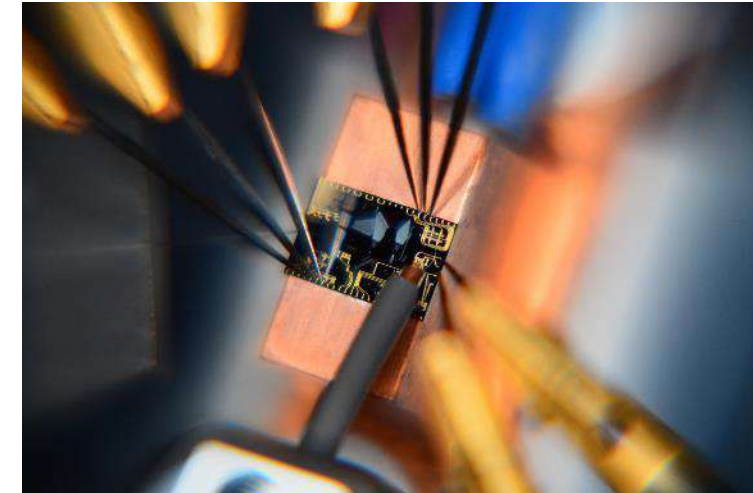
ASPIC design&characterization (2011) + technology (2020)



Our research support asset

- **ASIC design, characterization, and implementation**
- development of new integrated photonics platforms
- development of fiber-optic elements and systems
- expertise in optical spectroscopy
- „turn-key” R&D solutions in photonics

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DIGITAL HEALTH



Cooperation network

LightHouse



POLITECNICO
DI MILANO



Centre for Advanced Materials
and Technologies CEZAMAT
Warsaw University of Technology



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DIGITAL HEALTH

project idea

Integrated photonic interrogators for digital health monitoring



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Project scope:

Development of ASPIC-based digital health monitoring system for applications in integrated sensing systems (wearables, smart-seat, smart-bed etc.)

Key functionalities:

- monitoring of heart rate (HR), respiratory rate (RR) and temperature (T);
- implementation of ML/AI algorithms supporting the interrogation process and signal analysis;
- long-term monitoring, data collection and analysis.



Calls of interest

- HORIZON-HLTH-2027-02-DISEASE-01-two-stage: Innovative healthcare interventions for non-communicable diseases
- HORIZON-HLTH-2026-01-CARE-01: Public procurement of innovative solutions for improving citizens' access to healthcare through integrated and personalised approaches
- HORIZON-CL4-2027-04-DIGITAL-EMERGING-04: Challenge-Driven AI Innovation Booster in Apply AI prioritised sectors
- HORIZON-CL4-2027-05-DIGITAL-EMERGING-03: Advanced integrated photonic devices for extended features and ultra-low power consumption

Thank you