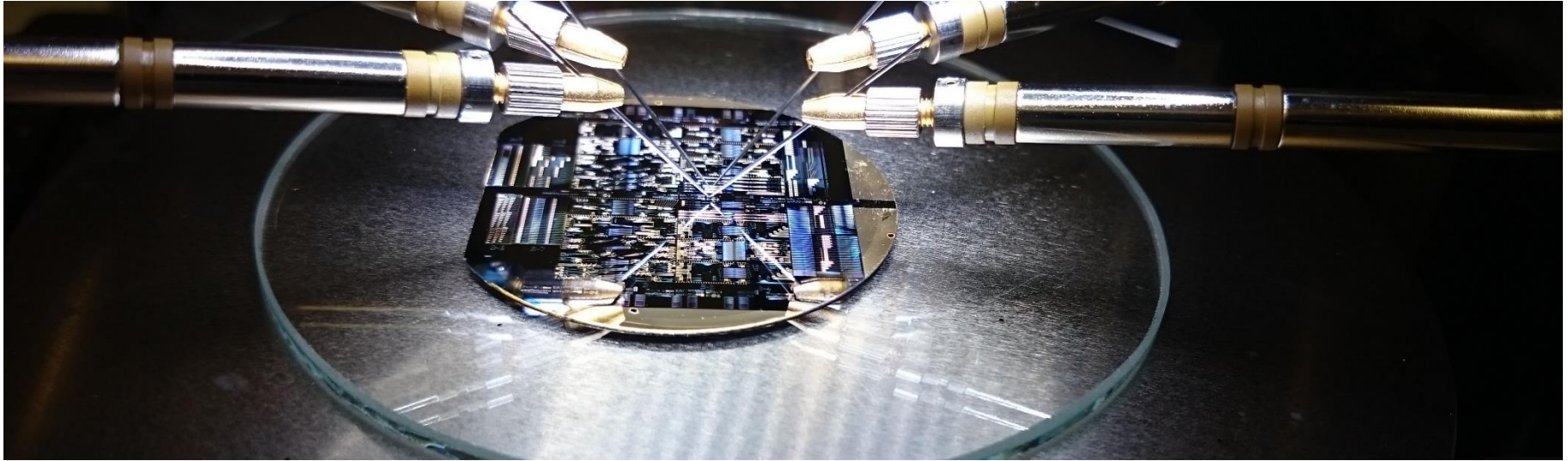


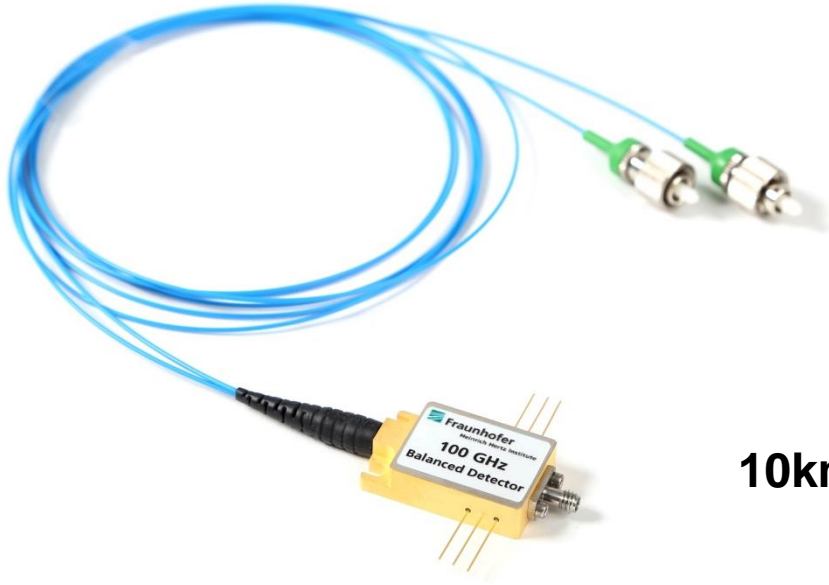
# FRAUNHOFER HEINRICH-HERTZ- INSTITUTE

## *EPIC CTO Meeting*

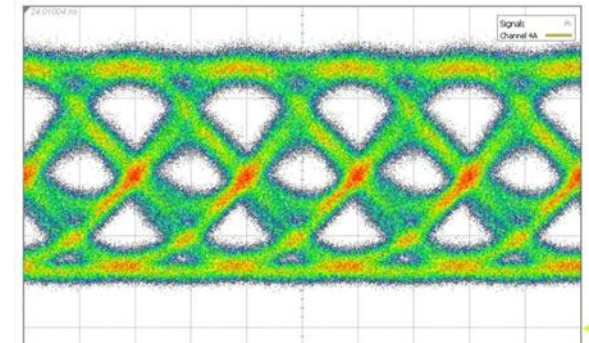
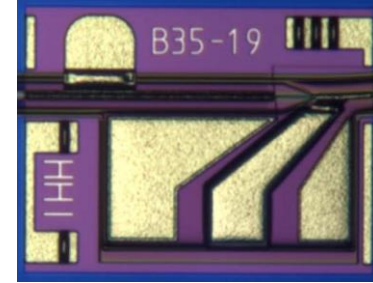


# HHI's Root: High Speed

*Example 100 GHz Detector, 100 Gb/s Laser*

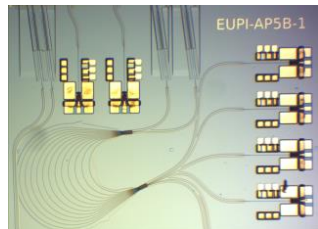


10km

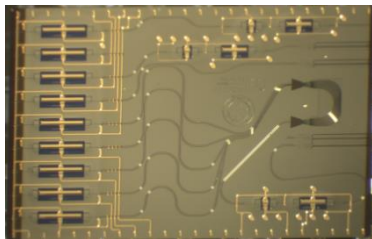


# InP Photonic Integration Multiproject Wafer Examples

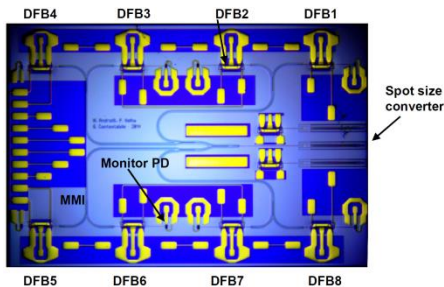
*Very Low Entry Threshold for your Ideas*



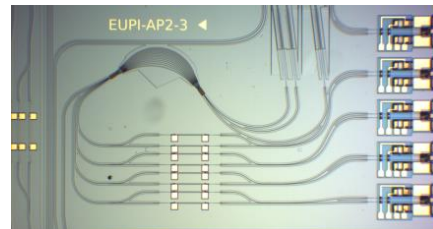
WDM receiver for FTTH  
(Genexis)



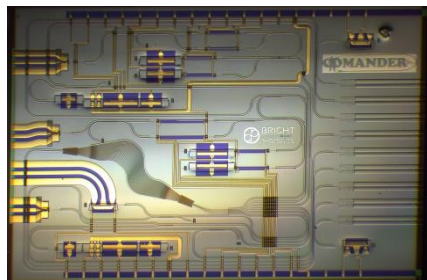
AWG-based harmonic mode-locked laser  
(Chinese Acad. of Sciences)



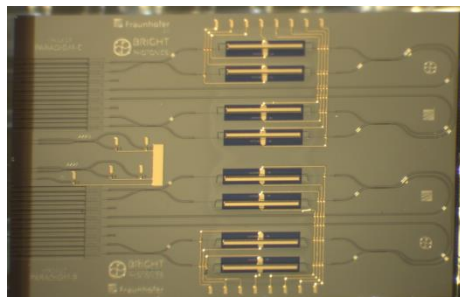
Multi-Wavelength transmitter  
(Scuola Superiore Sant'Anna)



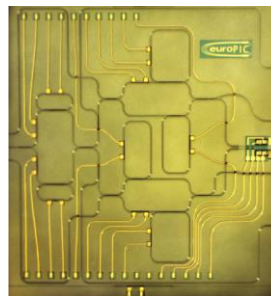
FBG-readout  
(Fibresensing)



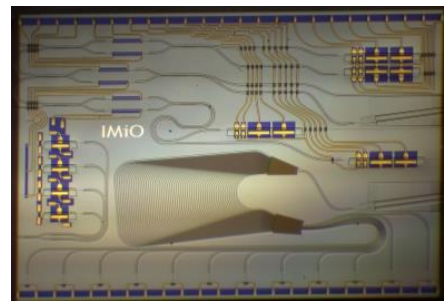
Integrated Tunable Filter  
(EU Commander)



5Gb/s Optical Flip-Flop Chip  
(Uni Thessaloniki)



Optical frequency discriminator  
(U Valencia/VLC)



Photonic integrated interrogator  
for fiber-optic sensor networks  
(Uni Warsaw)

# size matters

**lili optix** – the  
new dimension  
in optical  
components.

The innovative  
**lilix** components  
provide powerful  
functionality on a  
small footprint.



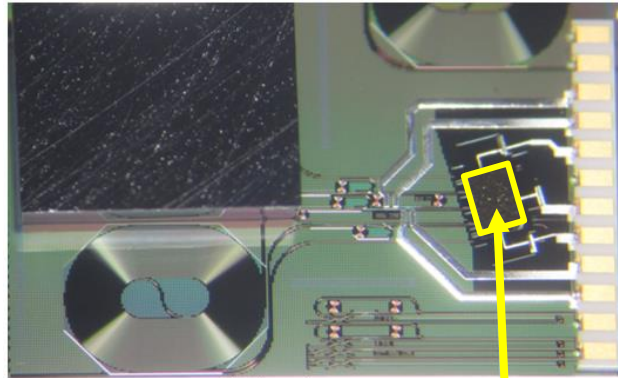
fibre optical components GmbH



# Hybrid Integration for Sensing

*HHI-laser integrated into Silicon Photonics platforms of IBM, Lionix*

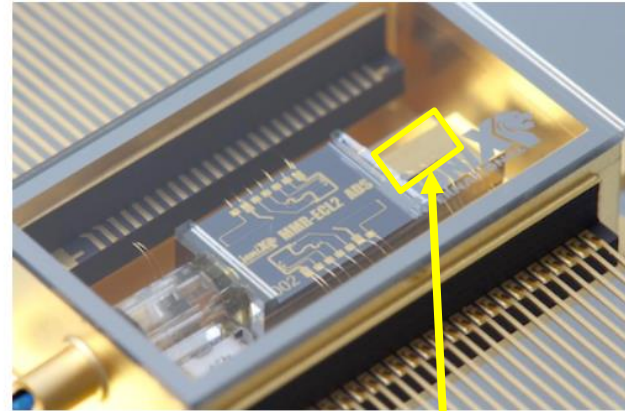
methane sensor  
IBM (USA)



Si Ph. substrate

HHI Chip

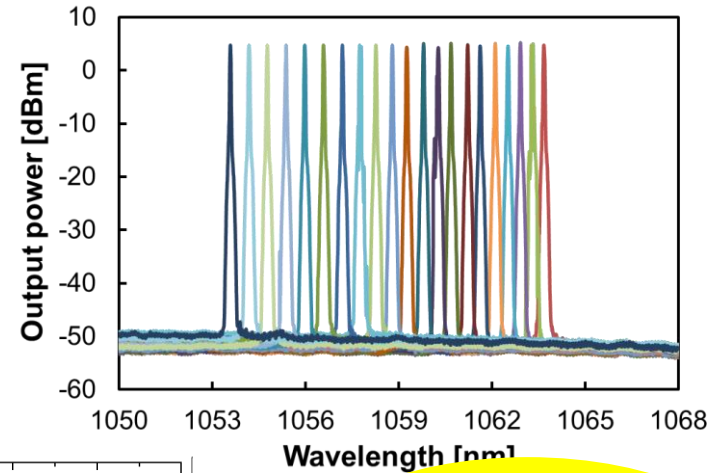
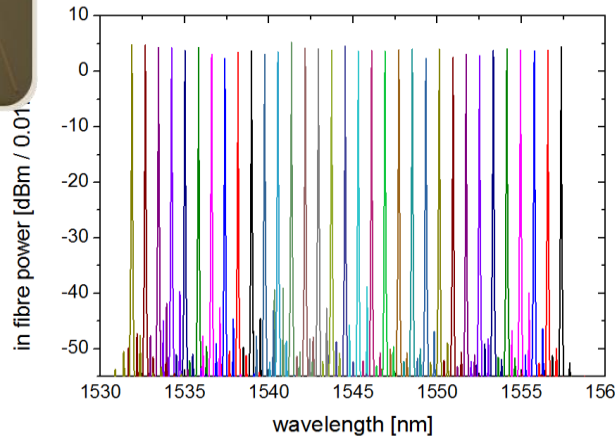
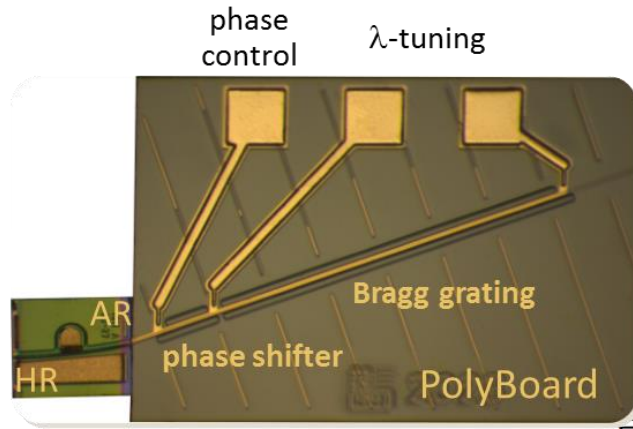
290 Hz linewidth laser  
Lionix (NL, 2017)



HHI Chip

# Hybrid Integration for Tunable Laser

*1550 nm and 1064, 780 nm*

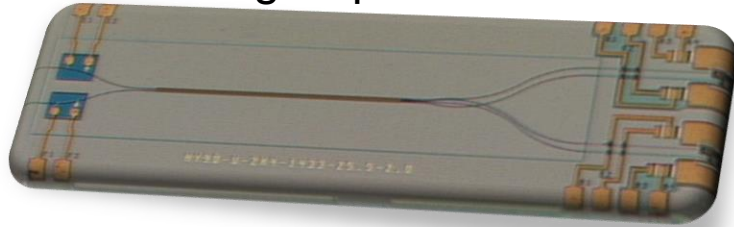


**New:  
1064 nm  
780 nm**

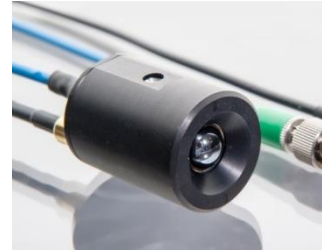
# HHI: Many Products Brought from TRL1 to TRL9

*From 100s to 10,000s pcs per year*

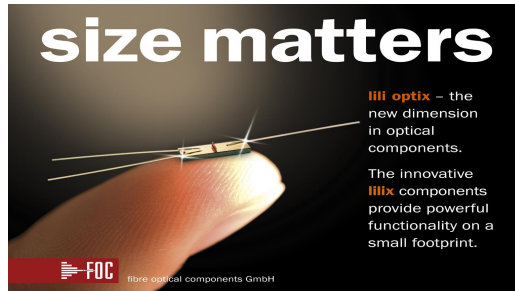
InP High Speed Coherent



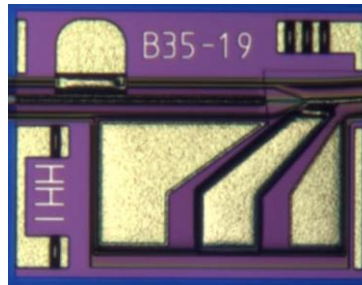
THz Components



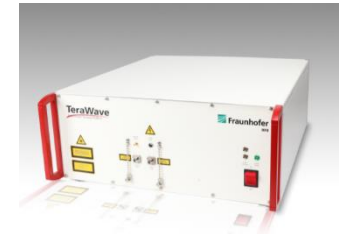
Hybrid Integration



InP High Speed Lasers



THz Lab Systems



# This presentation was presented at EPIC World Photonics Technology Summit 2019

HOSTED BY



GOLD SPONSOR

# PI

SILVER SPONSORS



EU initiatives funded by  
[www.photonics21.org](http://www.photonics21.org)



BRONZE SPONSORS

