



**Our chips drive your business**

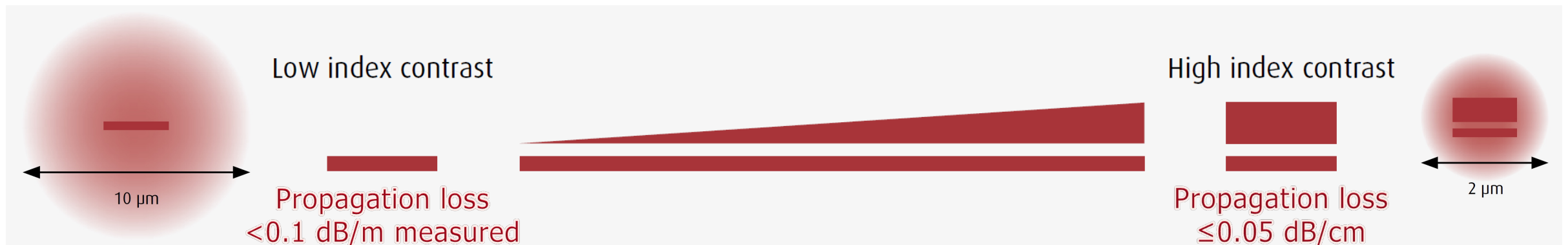
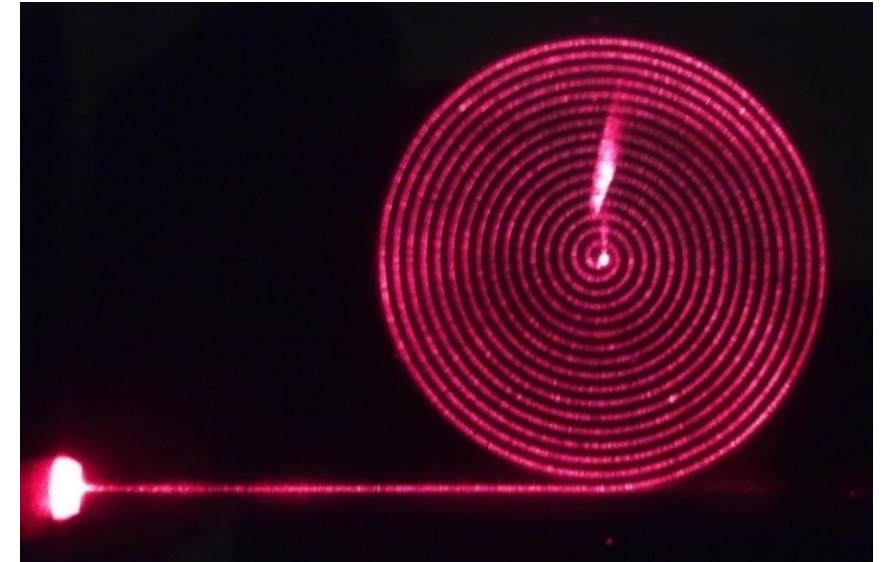
**[www.lionix-international.com](http://www.lionix-international.com)**

- Vertically integrated photonic solution provider from design to device
- 23 years of experience serving system integrators & OEMs
- Long-term partner for customers with scalable production volumes
- Team of ~70 employees
- Established in 2001 in the Netherlands
- Production in Enschede, Netherlands
  - LioniX International Labs
  - Assembly facilities
  - MESA+ Nanolab cleanroom





- 405-2350 nm wavelength range
- Ultra-low propagation & coupling loss
- On-chip contrast optimization
- Mature PDKs and MPWs
- Tested active building blocks

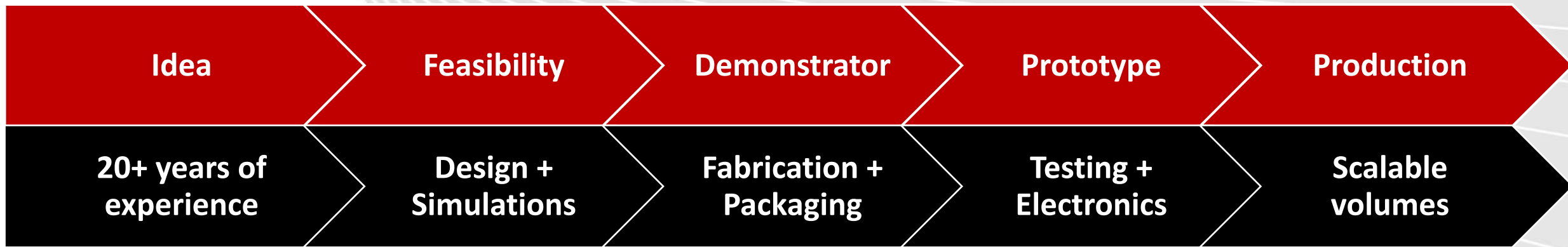


# Design to Device

Accelerating PLC adoption by  
lowering entry barriers to  
turnkey photonic solutions

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## Design to Device

Accelerating PLC adoption by  
lowering entry barriers to  
turnkey photonic solutions



Idea

Feasibility

Demonstrator

Prototype

Production

20+ years of  
experience

Design +  
Simulations

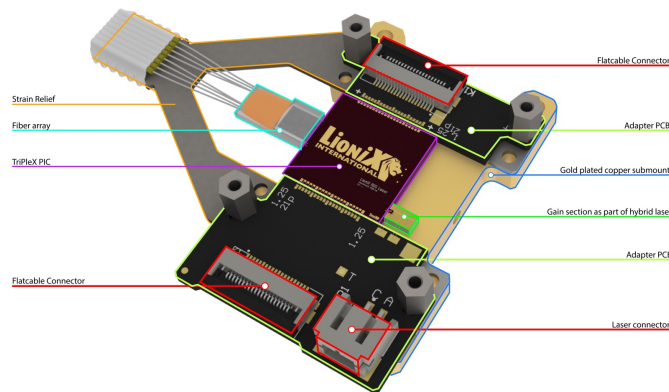
Fabrication +  
Packaging

Testing +  
Electronics

Scalable  
volumes

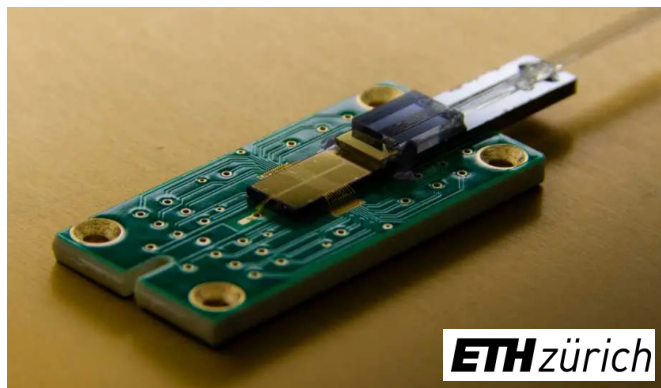
# Design to Device

Accelerating PIC adoption by  
lowering entry barriers to  
turnkey photonic solutions

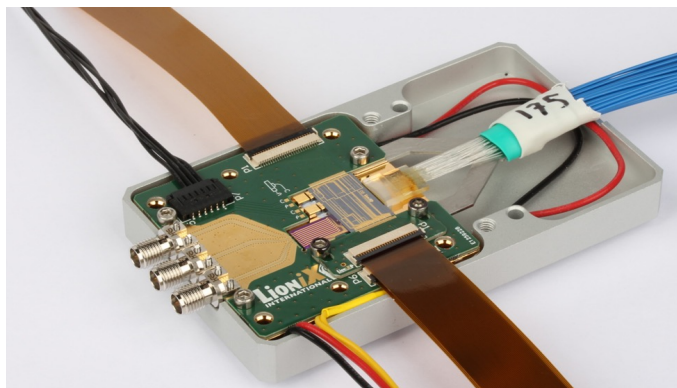


MPW packaged module

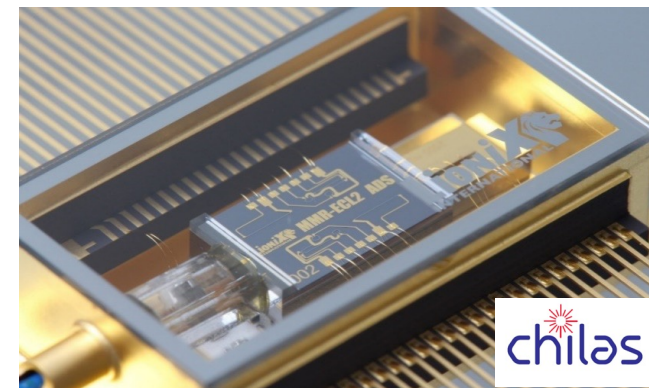




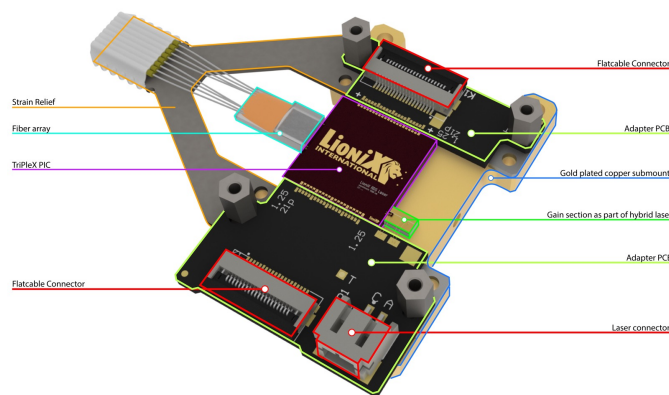
Ion trapping\*



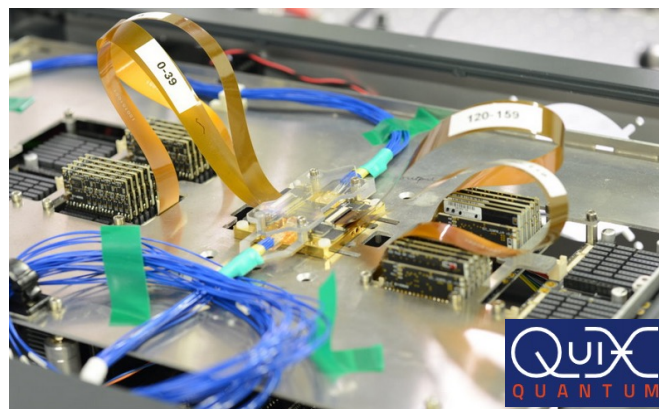
MWP systems



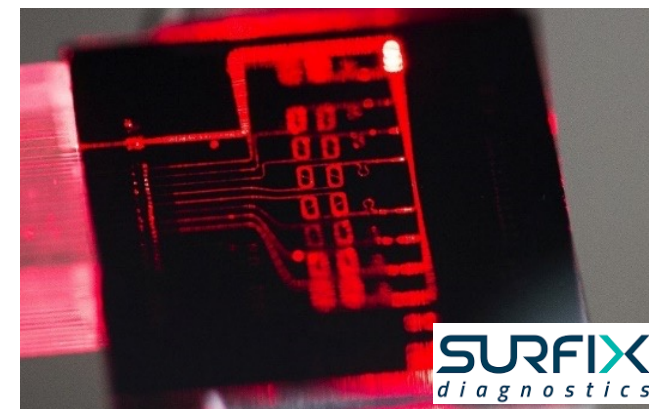
Tunable lasers



MPW packaged module

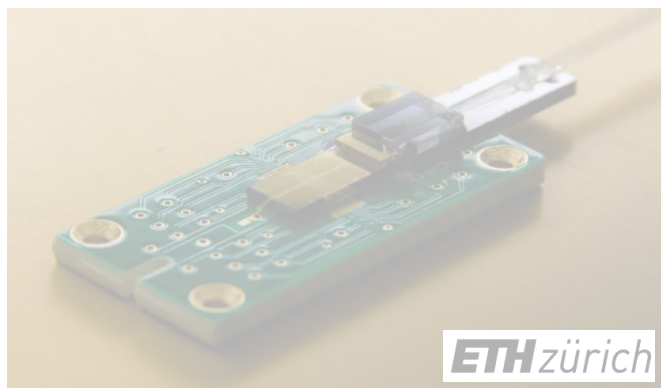


Quantum computing

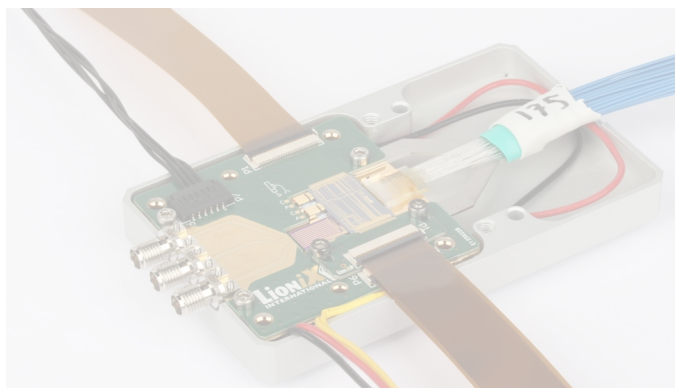


Bio Sensors

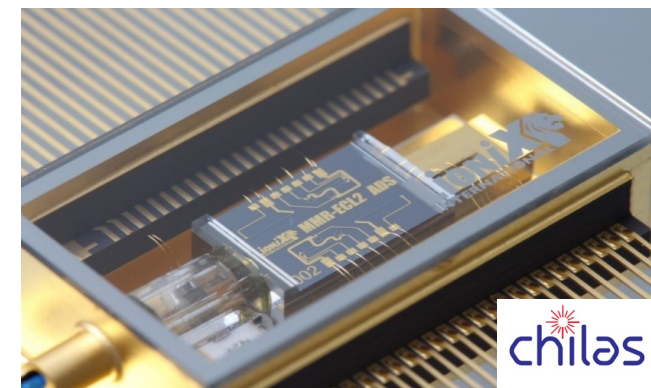




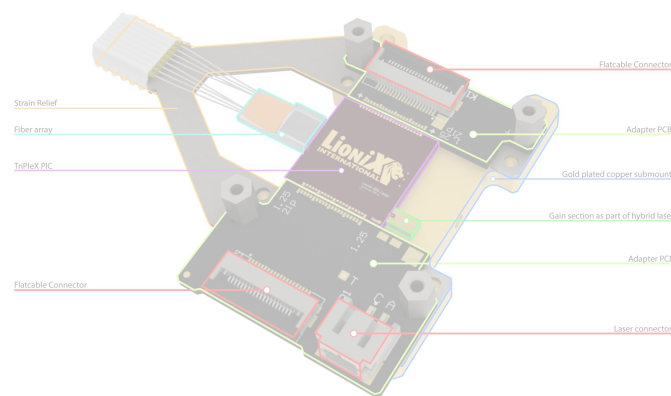
Ion trapping\*



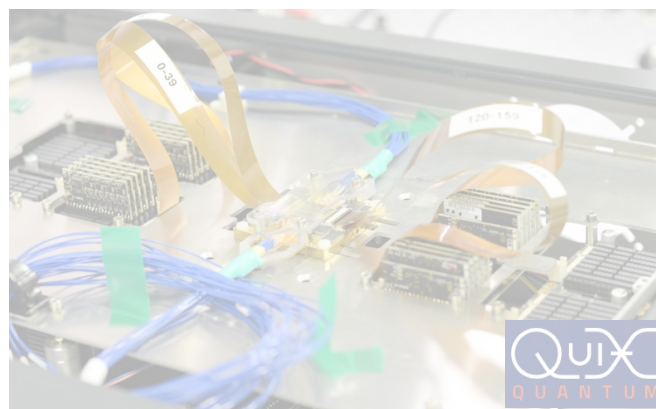
MWP systems



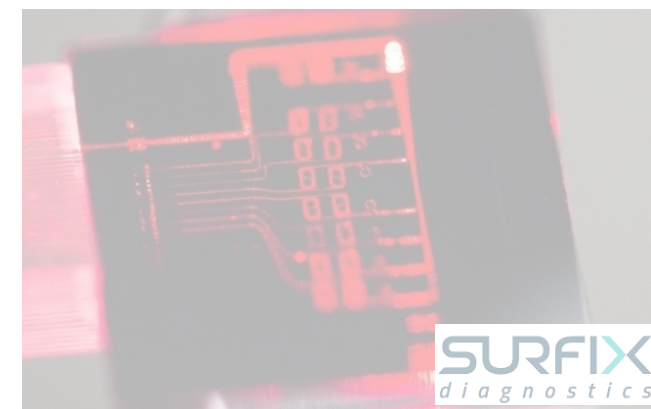
Tunable lasers



MPW packaged module



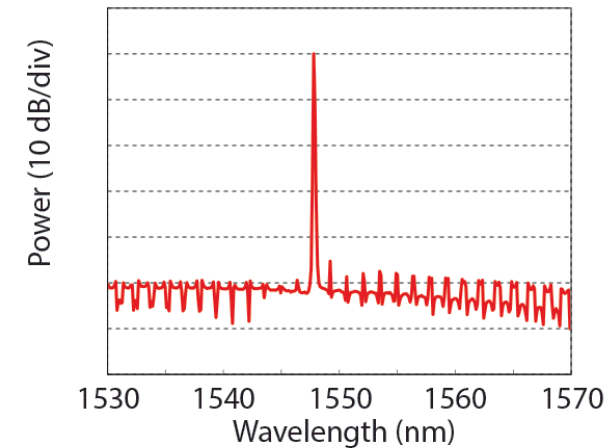
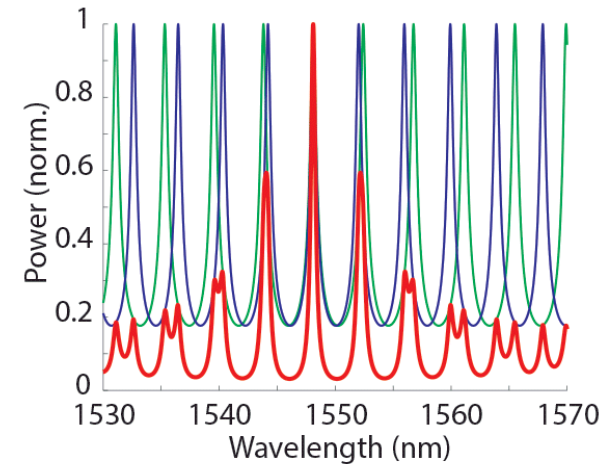
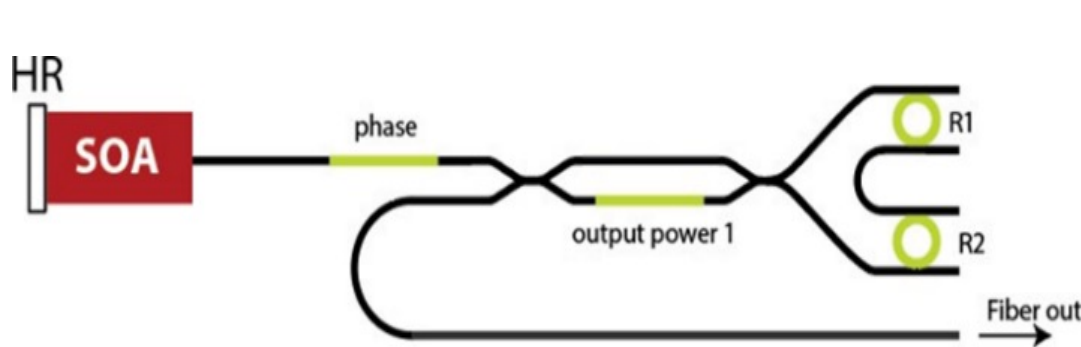
Quantum computing



Bio Sensors

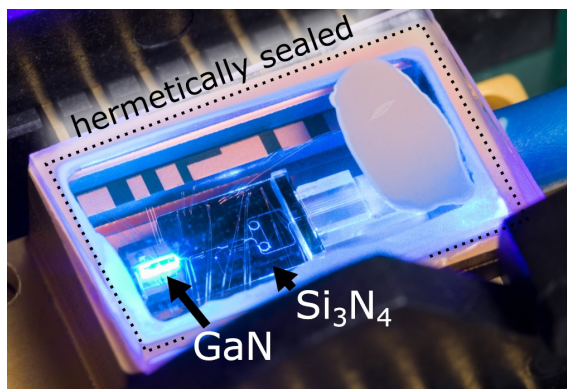
Three main characteristics of hybrid integrated external cavity lasers:

- ✱ **High output powers** - InP semiconductor optical amplifier (SOA)
- ✱ **Ultra narrow linewidth** - Low loss  $\text{Si}_3\text{N}_4$  external cavity
- ✱ **Broad tuning range** - Coupled micro-ring resonators with slightly different FSR exploiting the Vernier effect

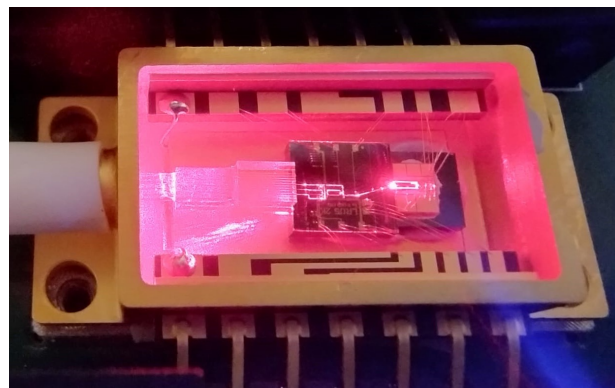




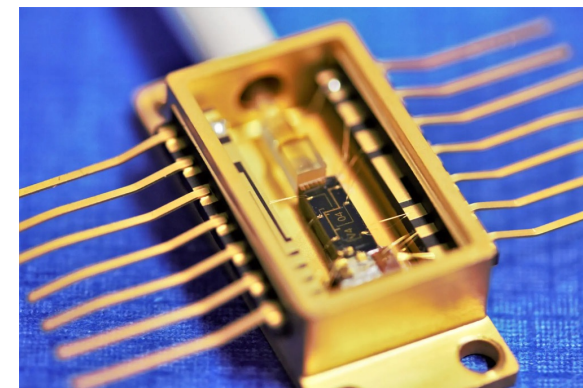
# Lasers across the spectrum



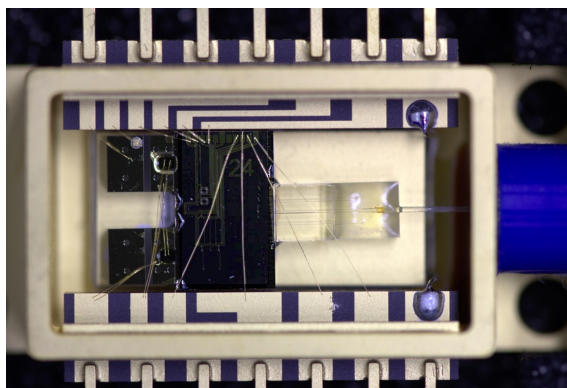
455 nm



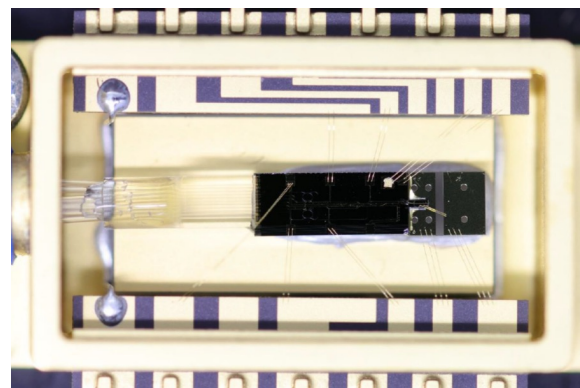
690 nm



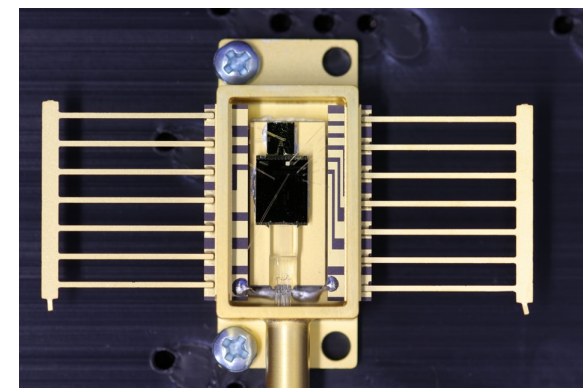
850 nm



1550 nm



1310 nm

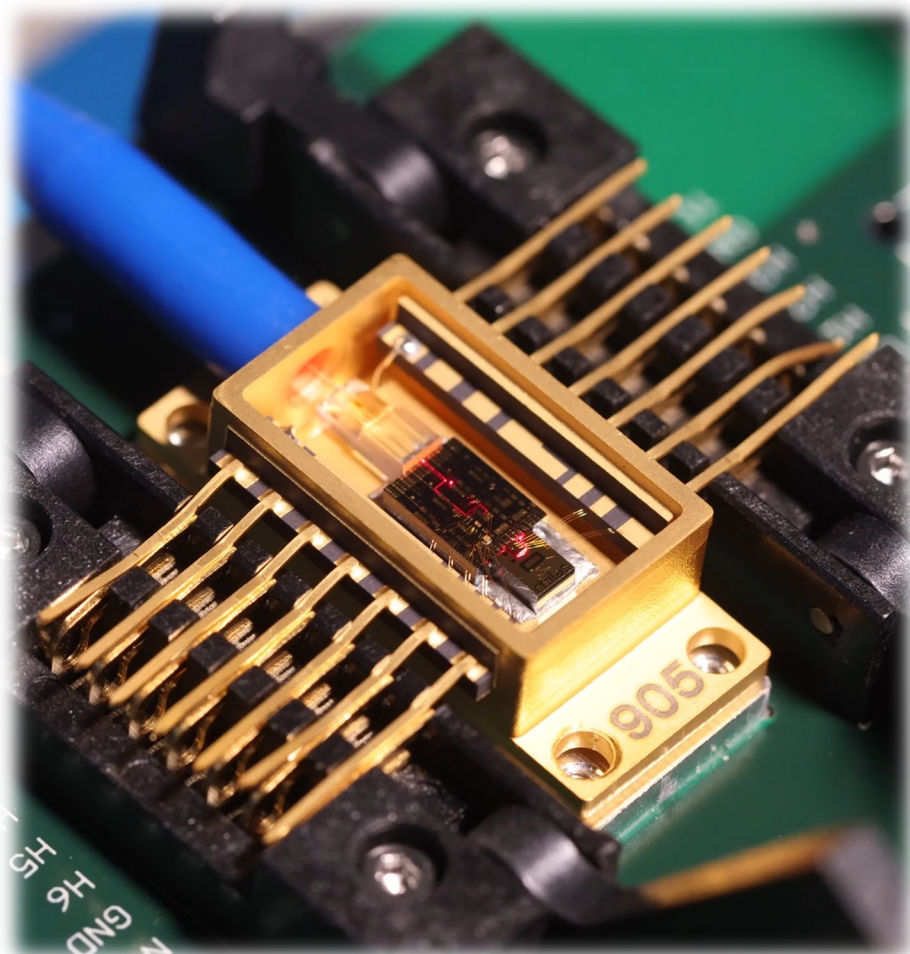


1064 nm

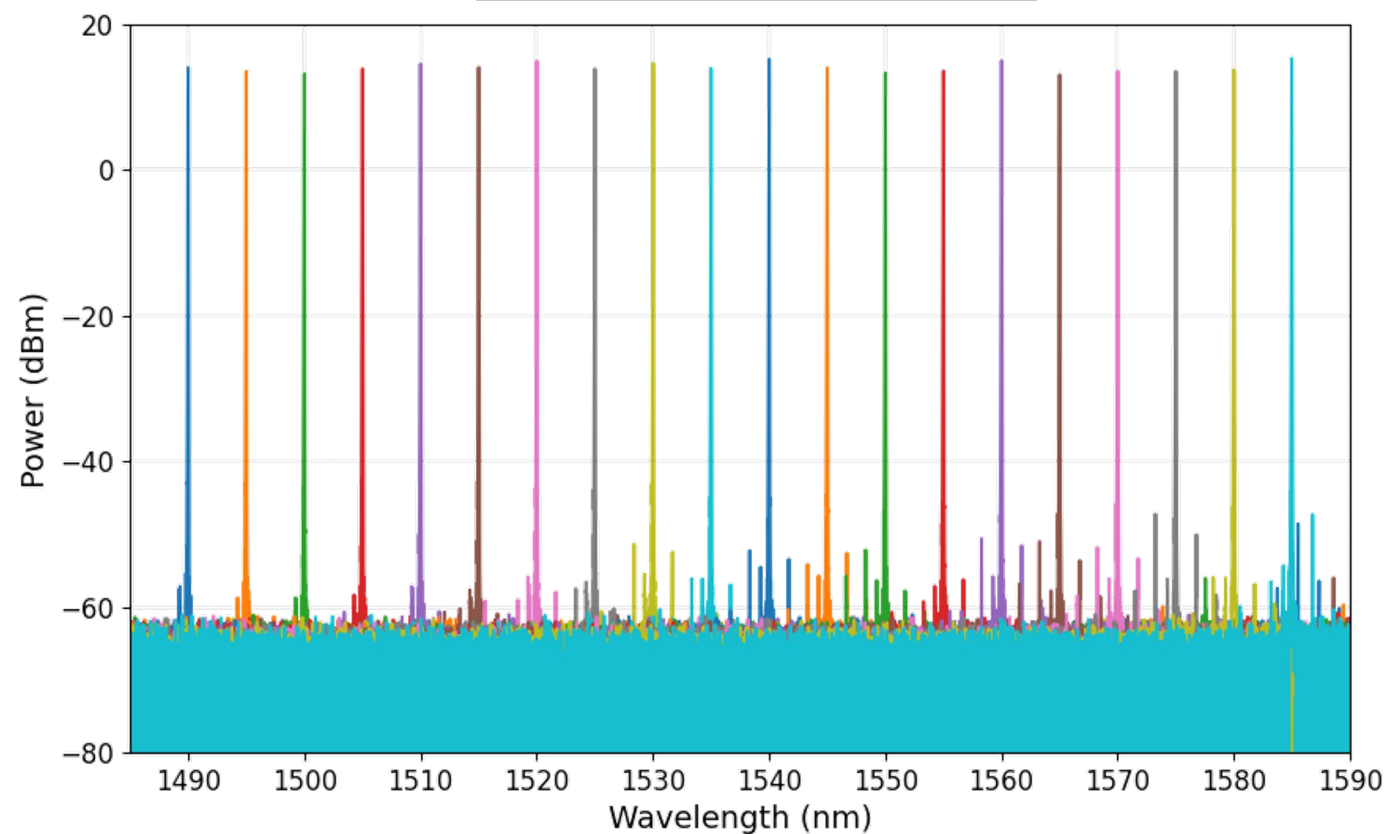
Partners: LPNO group UT, Chilas, Fraunhofer HHI, Sivers Photonics, Superlum, Exalos, Aluvia, PhiX



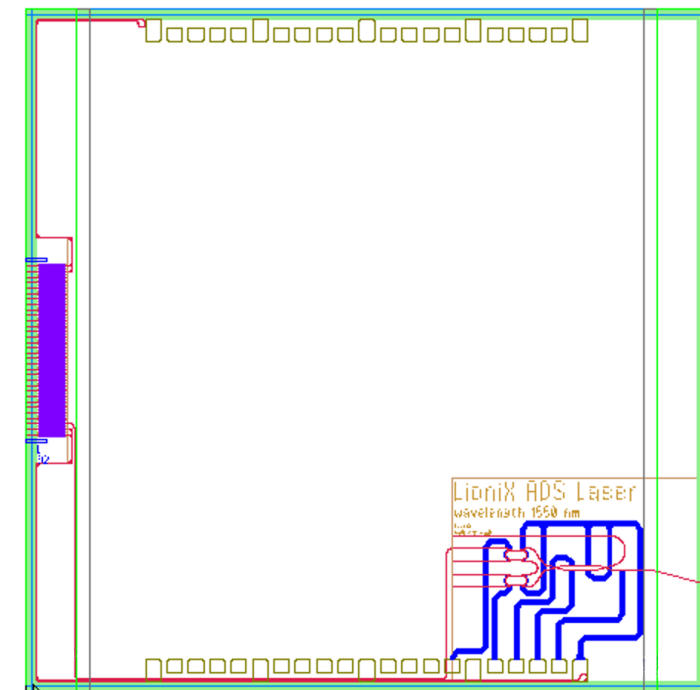
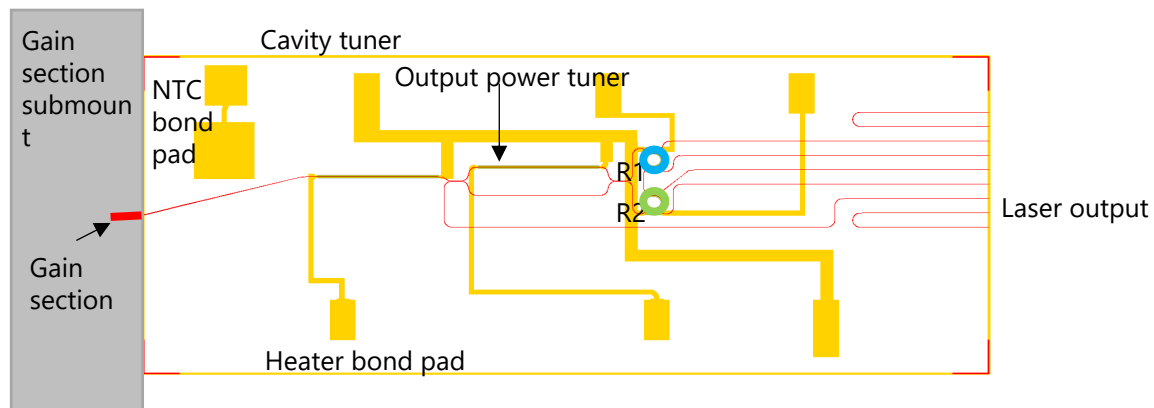
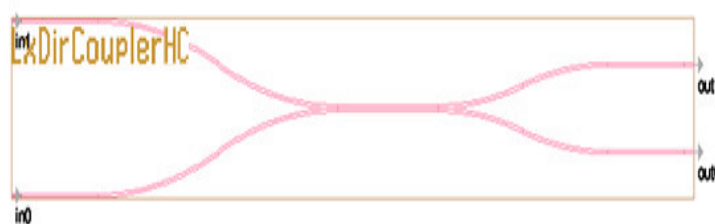
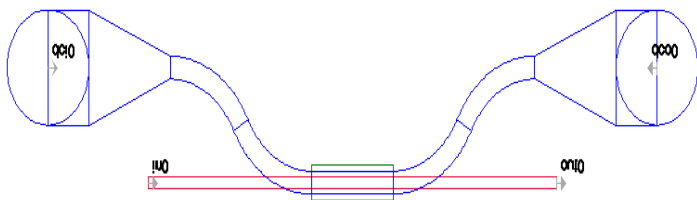
# Laser as a mature product



Wavelength	1490-1580 nm
Power	13 dBm
Linewidth	< 5 kHz



# Laser available on 1550 nm MPW







**ORDER BEFORE**  
**April 30**



**1550 nm or 850 nm**



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**MULTI PROJECT WAFER RUNS**