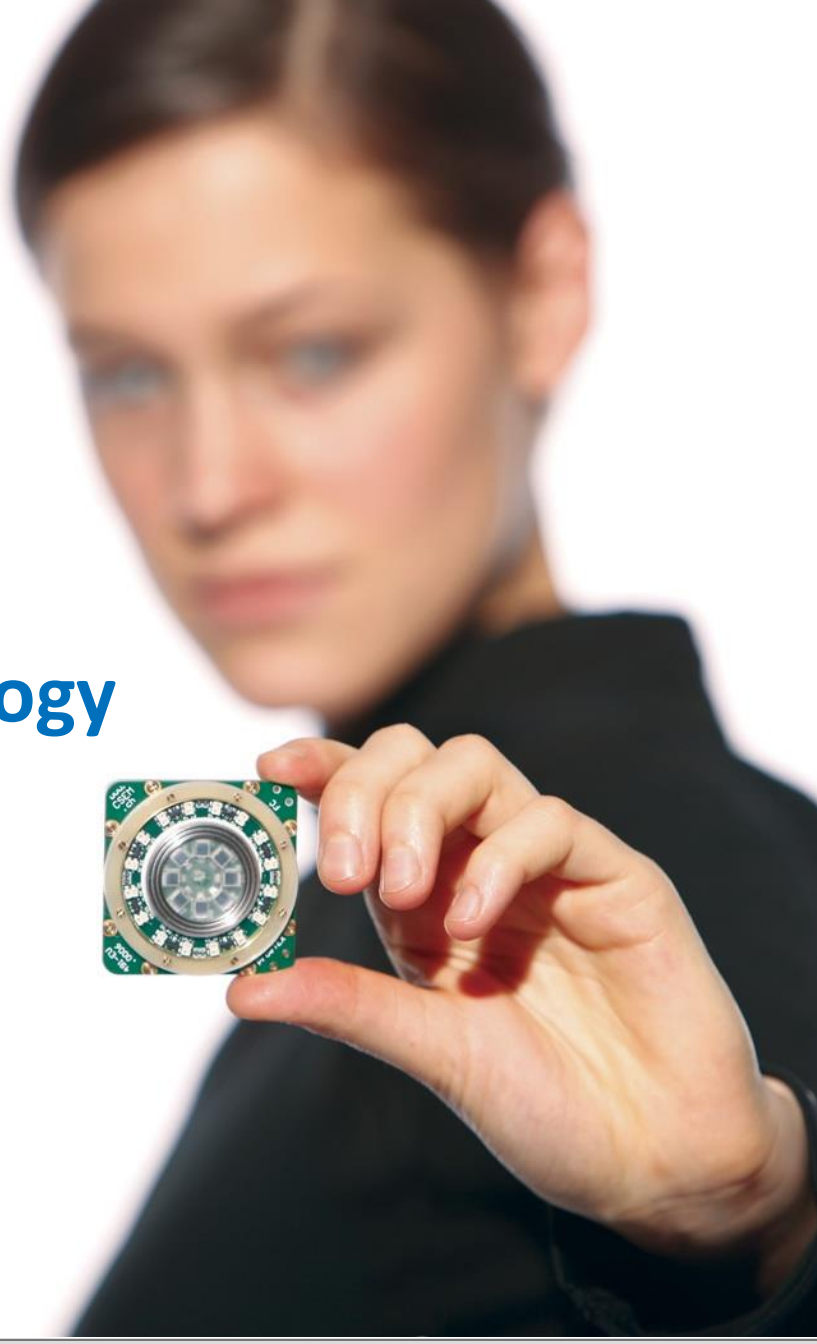
CSEM Packaging and Laser Services
&
The Swiss Photonic Packaging Laboratory (SPPL)

Dr. Philippe Steiert

Director of CSEM Regional Centers

CSEM
the Swiss platform
for transfer in microtechnlogy



Dr. Philippe Steiert

Director of CSEM Regional Centers

Technologie Transfer

CSEM at a glance

Our mission

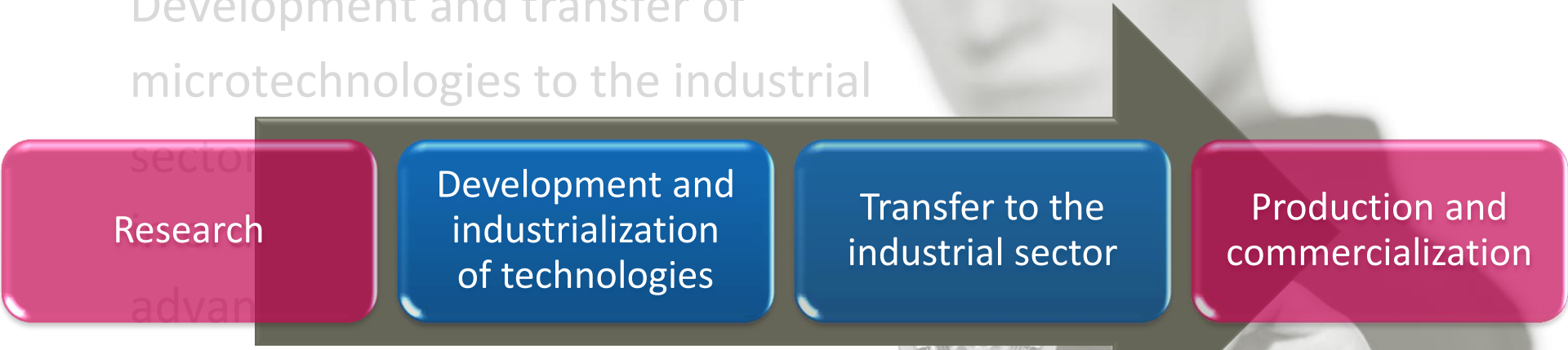
Development and transfer of microtechnologies to the industrial sector – in Switzerland, as a priority – in order to reinforce its competitive advantage

- Cooperation agreements with private companies
- Creation of start-ups

CSEM at a glance

Our mission

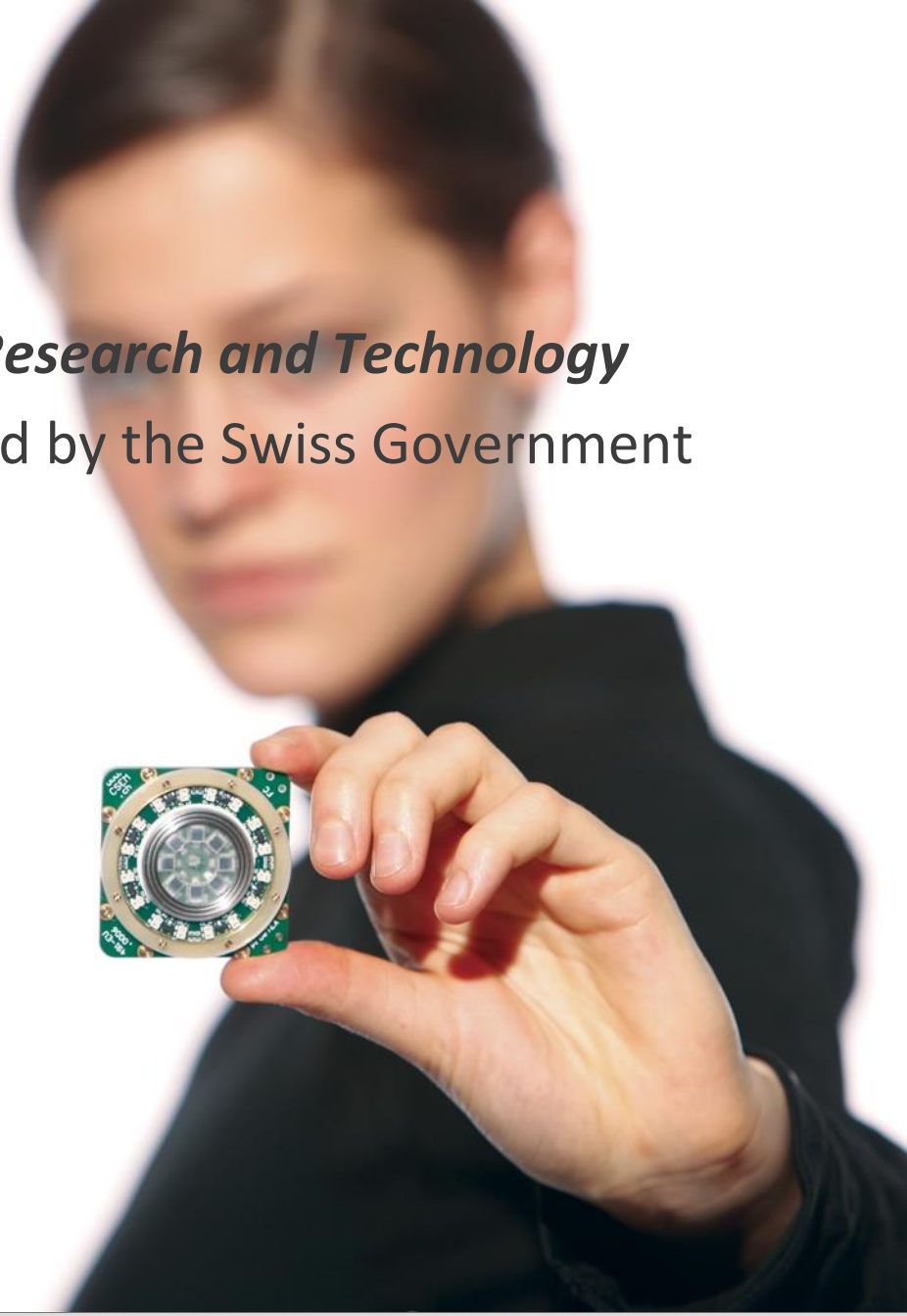
Development and transfer of microtechnologies to the industrial sector



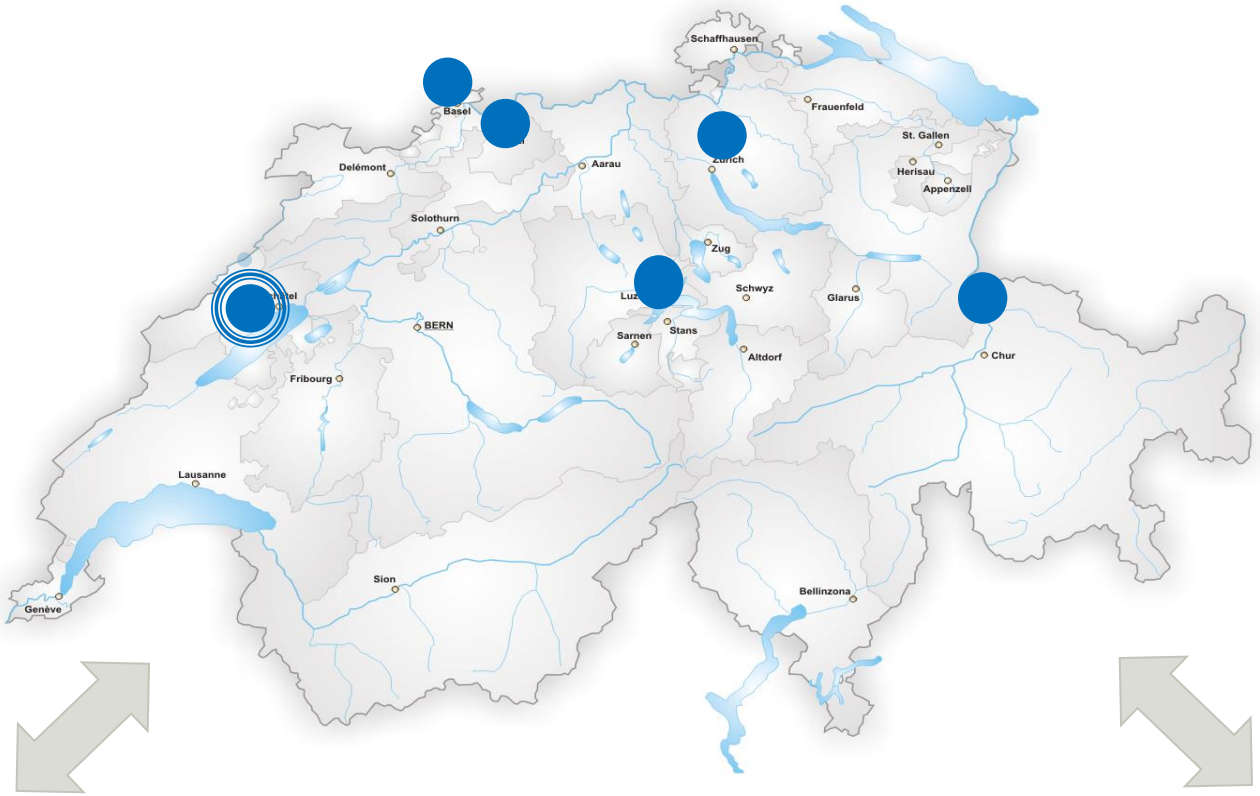
- Cooperation agreements with private companies
- Creation of start-ups

CSEM at a glance

- Incorporated, non-for-profit ***Research and Technology Organization (RTO)***, supported by the Swiss Government
- **A public-private partnership**
  - 31 % public
  - 69 % private
- **Key figures** (2012)
  - Revenues ~ CHF 70 mio
  - Employees ~ 400



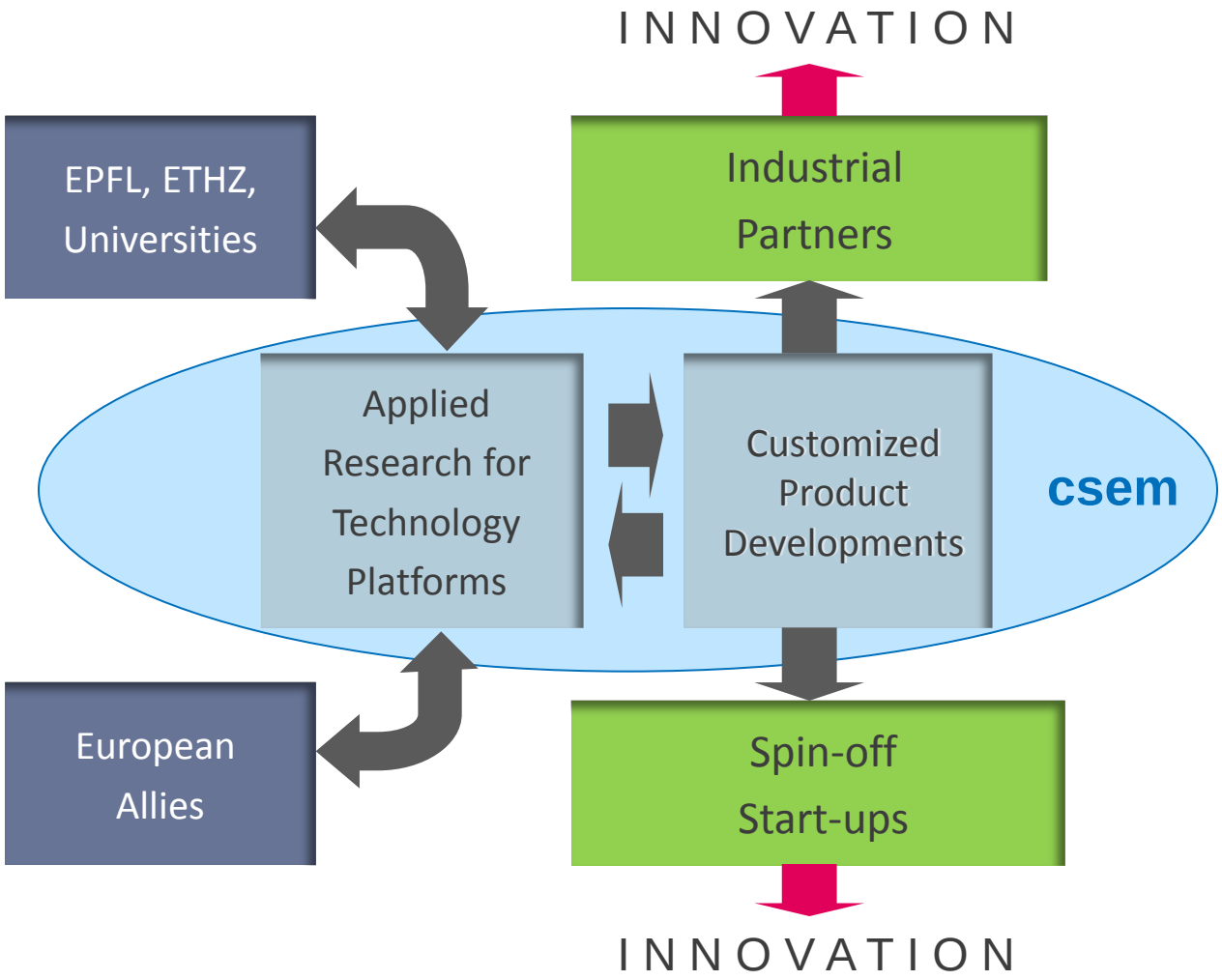
Closer to the industry …



csem brasil

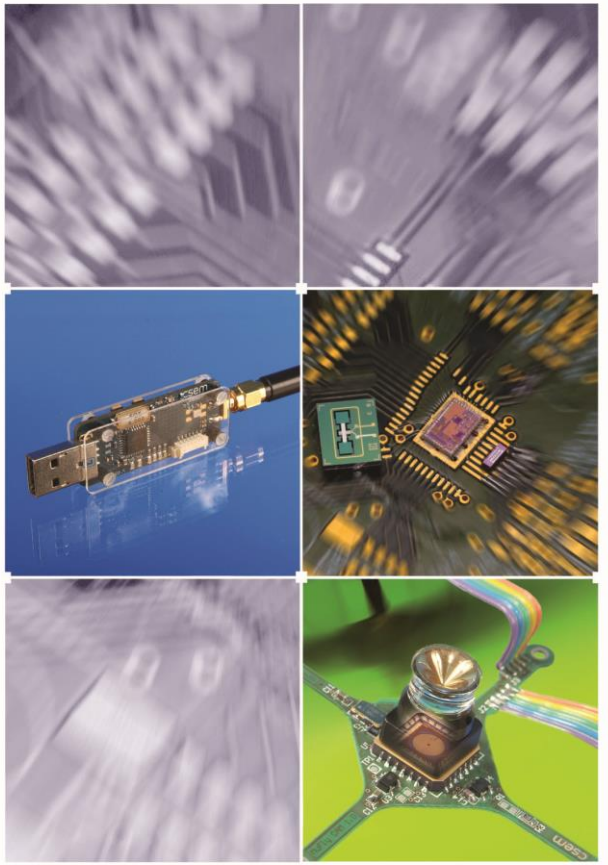
csem uae

Valorizing Technology Platforms

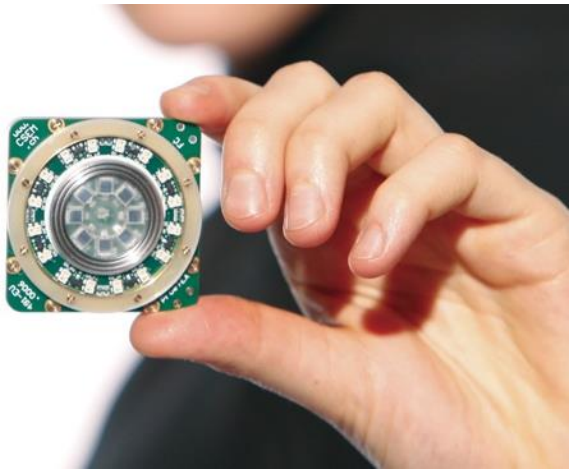


CSEM's technology programs

- MEMS
- Surface engineering
- Systems
- Ultra-low-power integrated systems



CSEM Packaging and Laser Services & The Swiss Photonic Packaging Laboratory (SPPL)



SWISS PHOTONICS

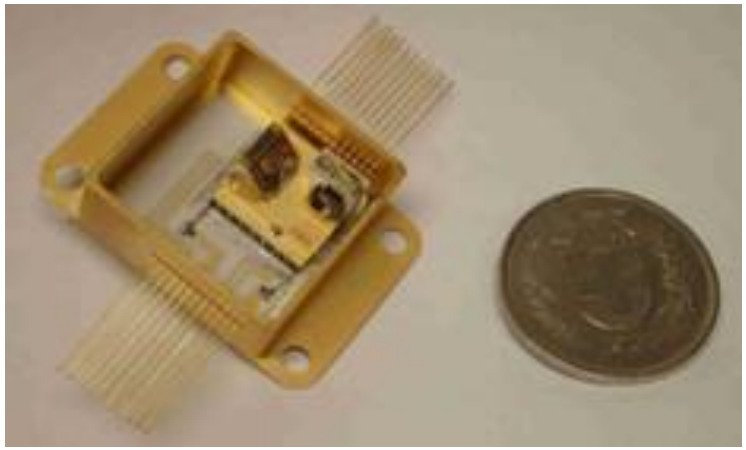
Seven laboratories were approved by Swissphotonics

- Swiss National Applicaton Laboratory for Photonic tools and Photonic manufacturing (SNAPP)
- Swiss National Optics Platform (SNOP)
- Swiss Photonics Master Education (SPME)
- Swiss National Fiber Lab (SNFL)
- Swiss PV Research Platform (SPVR)
- **Swiss Photonic Packaging Laboratory (SPPL)**
- Swiss National Lab for Solid State Lighting (SSSL)

Mission

- To be a one stop shop contact for the Swiss industries for Photonic Packaging.
- To build up a network with all interested research organisations within Switzerland.
- CSEM will serve as entrance point for customer requests.

→ ensure the best solution for the customer



Application case: atomic clocks

Summary

- The SPPL will provide many opportunities for the Swiss photonics market including
  - the development of robust, reliable and low cost processes designed for devices/sensors and complete photonic systems
  - precision robot systems for automation
  - manufacturing capabilities through the building up an extension of an infrastructure for process development and pilot and small series

Questions to:

Christoph Harder

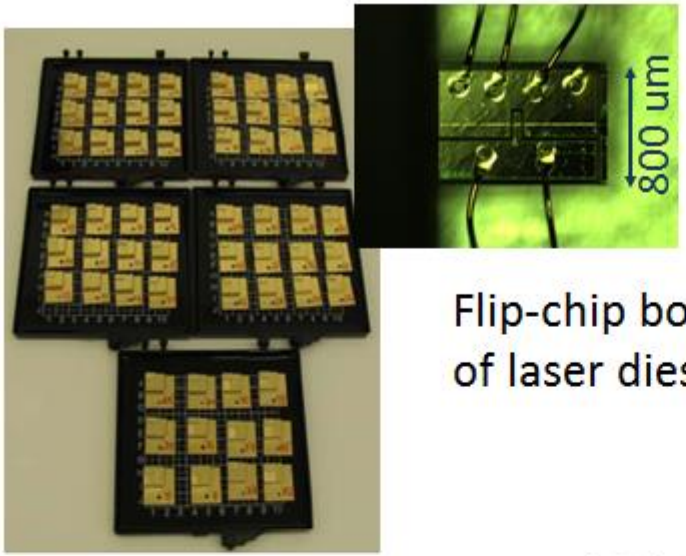
President Swissphotonics

Christian Bosshard

Managing Director Swissphotonics

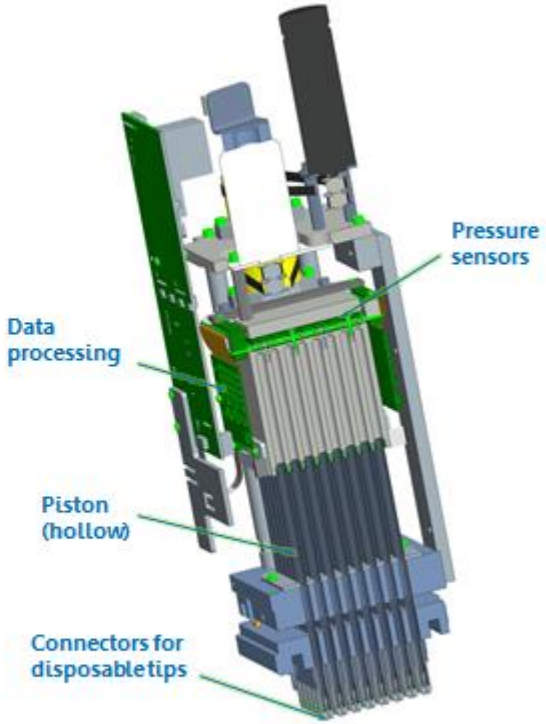
Packaging infrastructure

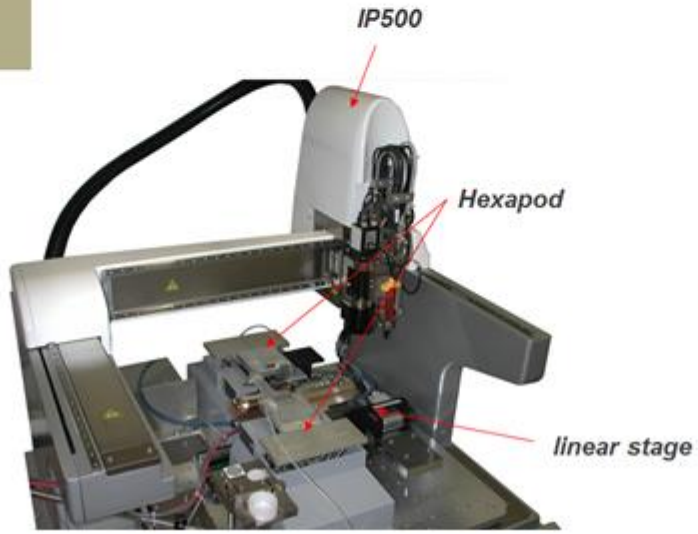
Manufacturing services



Flip-chip bonding
of laser dies

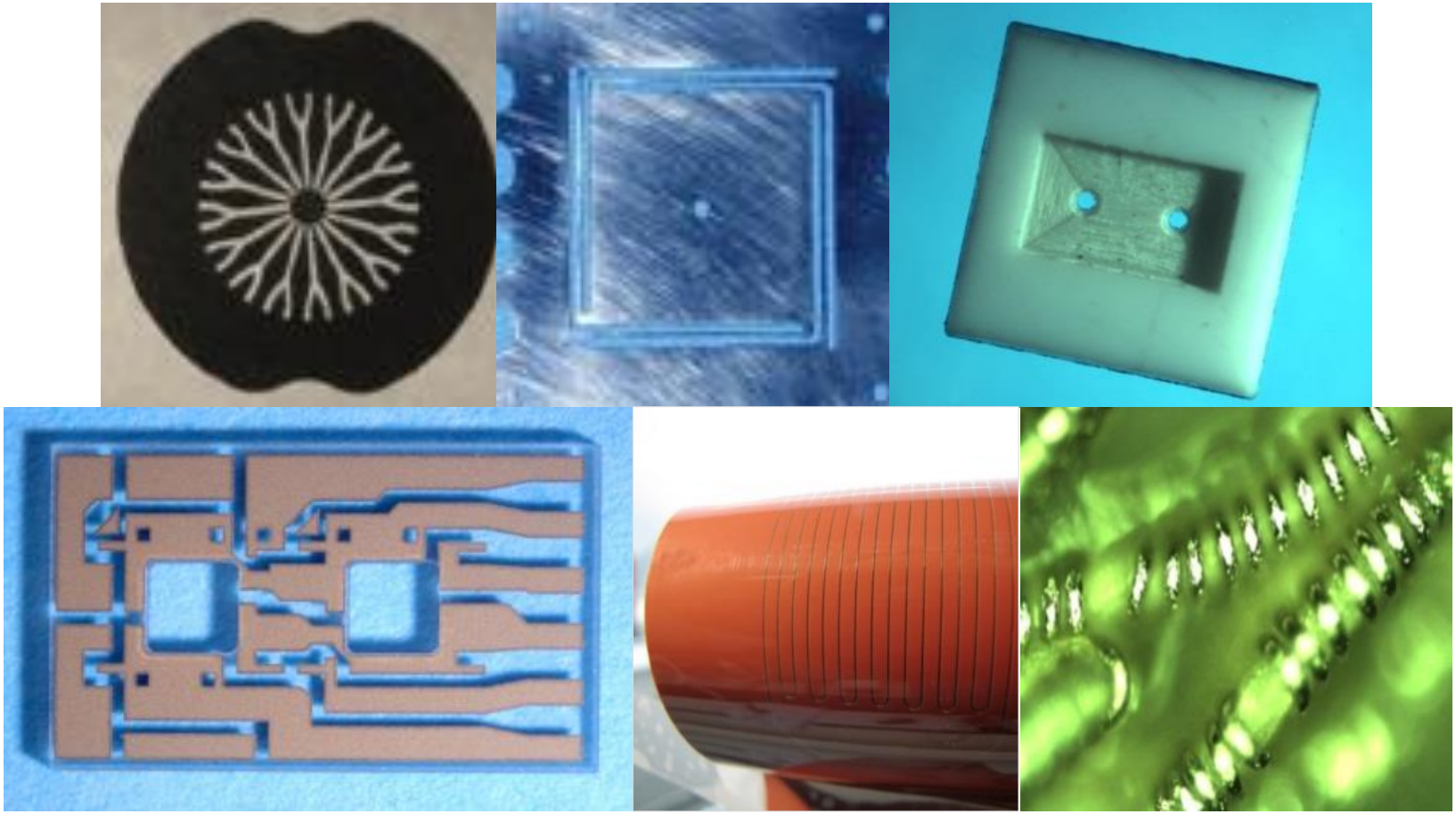
Pressure sensing boards





High-precision
adhesive fixing
of optical elements

Laser services




Thank you for your attention