

Workshop 8. June 2015 in Alpnach
(Photonics) Packaging for Harsh Environments

a joint event by

SWISS  PHOTONICS

and

∴ csem

SWISS PHOTONICS and the Swiss National Laboratory for Photonic Packaging (SPPL)

Swissphotronics is the Swiss NTN (National Thematic Network) for photonics, supported by the Swiss innovation promotion agency CTI (non-profit association)

The **SPPL (Swiss Photonic Packaging Laboratory)** aims to be a one-stop shop contact to serve and support the Swiss industry, especially SMEs, in the field of photonics packaging and related joining technologies.



Non-profit - Research Transfer Organization



Materials Science & Technology

Laboratory Joining Technologies & Corrosion



Institute for Micro and Nanotechnology at the University of Applied Sciences Buchs

CSEM at a glance

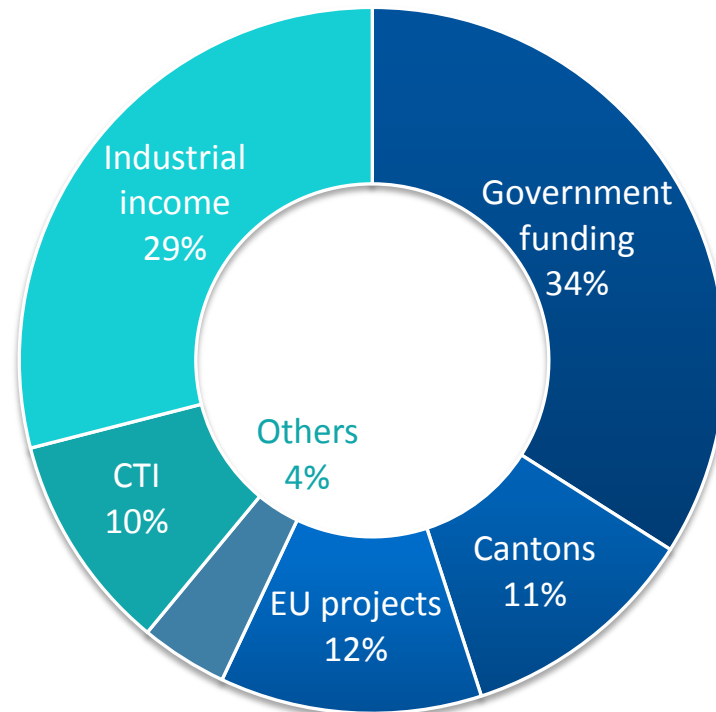
- **Our mission**

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

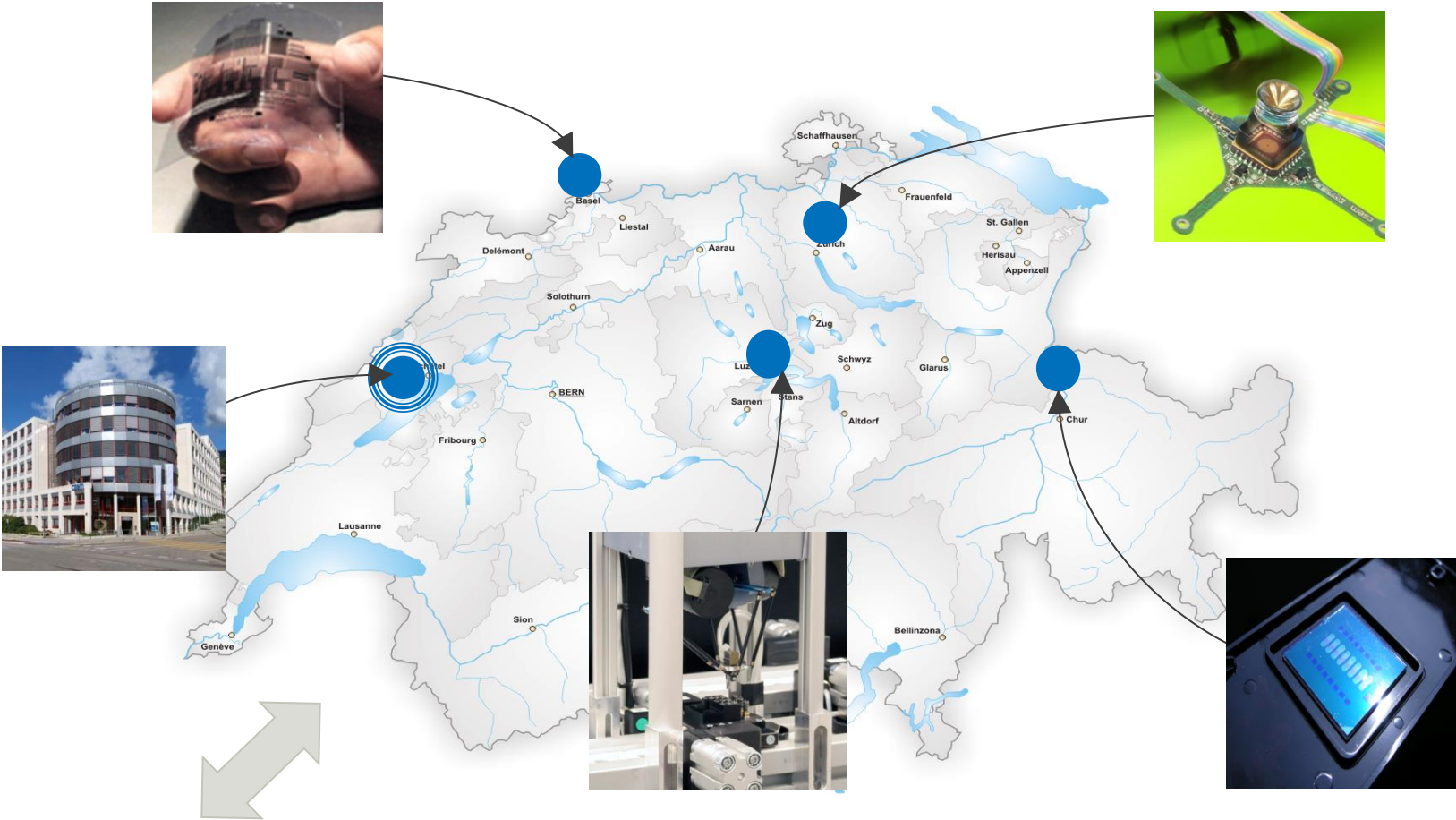
- Incorporated, not-for-profit **Research and Technology Organization (RTO)**, supported by the Swiss Government

- **A public-private partnership**

- 31 % public
- 69 % private

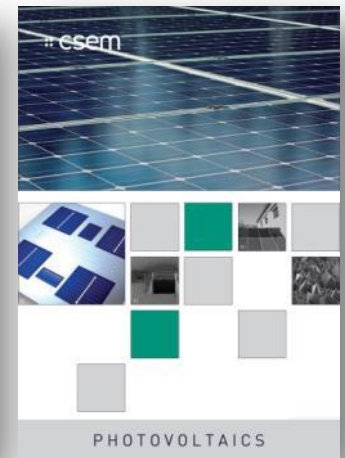
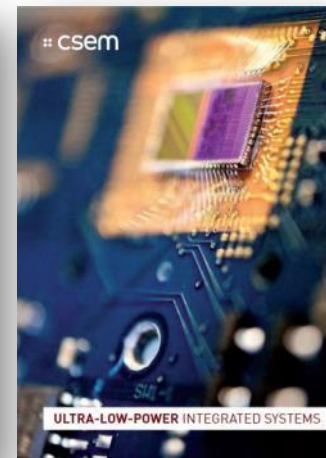


Closer to industry ...



CSEM's technology programs

- MEMS
- Surface engineering
- Systems
- Ultra-low-power integrated systems
- Photovoltaics & energy management



Center Central Switzerland Alpnach

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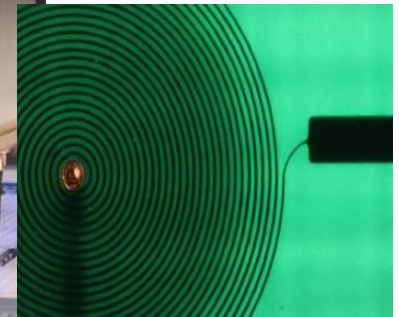
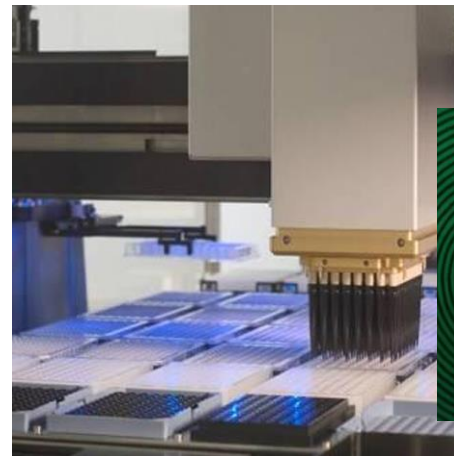
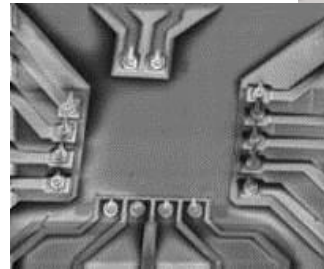


Rigi

Luzern

CSEM Central Switzerland: Technology-Platforms

1. Robotics & Microassembly
2. (Photonic) Packaging for Microsystems
3. Tools & instruments for the Life Sciences
4. Sensors & Systems
5. Laser processing



Workshop: Photonic packaging for harsh environments

... to boldly go where no man has gone before



- **Mission of workshop:**
 - Identify challenges of the market where technical solutions are wanted
 - Evaluate the gap between current industrial potential and market requirements
 - **Workshop in Groups: 1) Medical 2) Industrial 3) Aeronautic/Space**
- **Harsh environments** beyond the range of standard use conditions
 - Higher grade packaging and screening and testing to severe limits required
 - High temperatures and extreme temperature changes
 - High levels of electro-magnetic interference (EMI) or radiation
 - Harsh mechanical conditions (shock, vibration)
 - Exposure to contaminants and corrosive materials

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Head of *Joining Technologies & Corrosion lab*
Empa, Dübendorf ZH

Welcome

Integrated fiber optics acceleration sensors for hazardous environments

Photonics Packaging for Space Environment

Life Science Tools and In-Vitro Diagnostics – Challenges for industrialization of OEM-solutions

Optical and RF transparent long-term biocompatible packages

Industry-Driven Packaging Solution: Delicate Devices in Harsh Environments

Recent developments of joining technologies for ever more complex industrial requirements