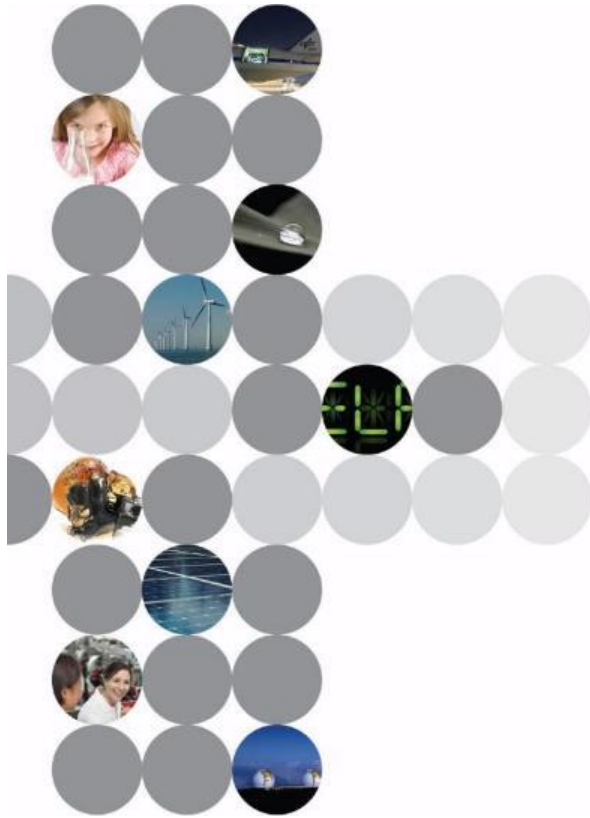




Intelligente Oberflächen: von der Technologie zum Markt

Trends in Micro Nano

Christian Bosshard
November 30, 2017

CSEM at a glance



79.3

Turnover
(mio CHF)



40

Nationalities



437

People



43

New ventures



190

Industrial
clients



196

Patent
families



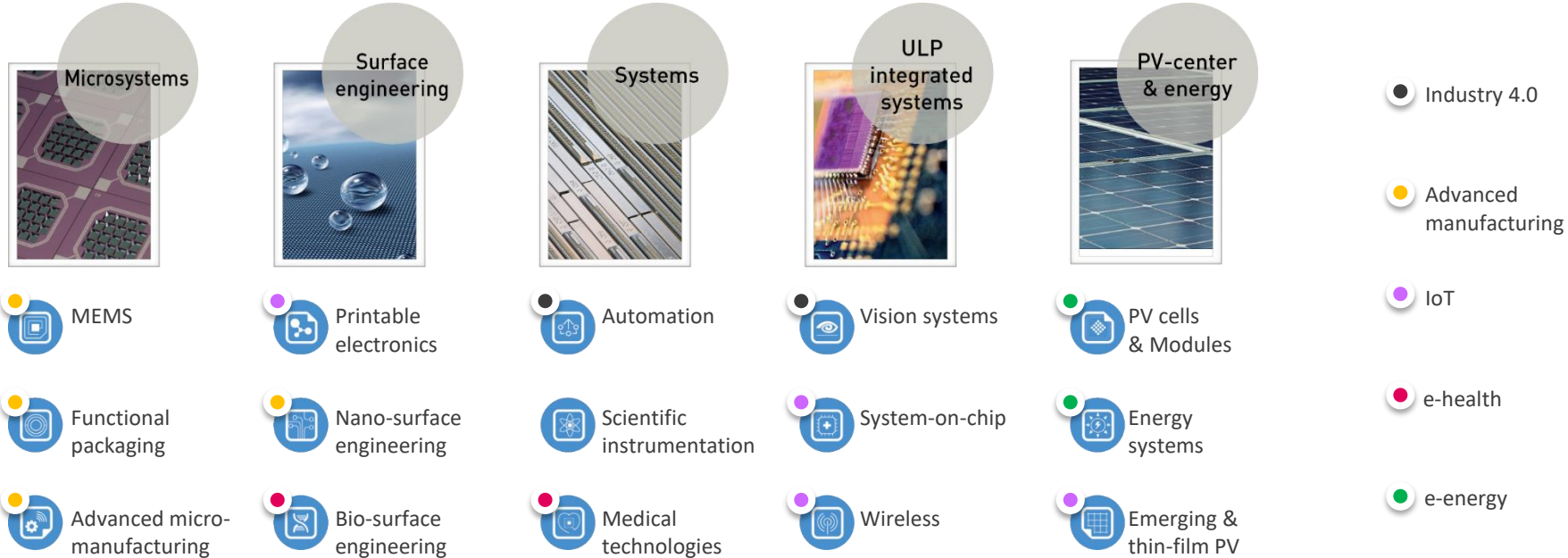
62

European
projects

Close to industry, leveraging Swiss academic research



Technology platforms to foster innovation



Human-Machine Interface

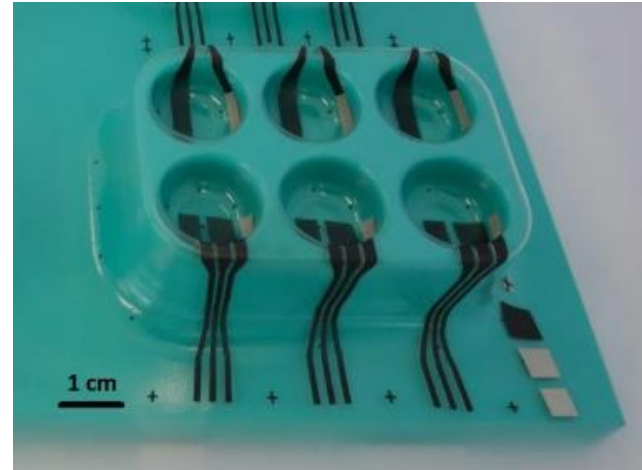
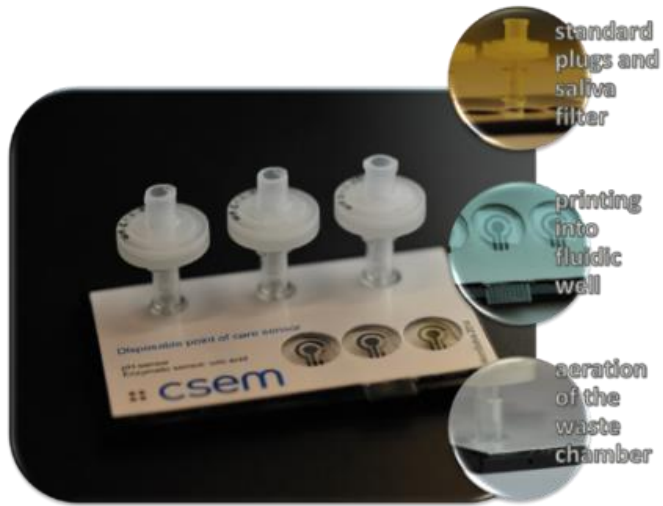


ARTE

Printing of Functional Electrodes for Biotechnology



Printing of Functional Electrodes for Biotechnology



Industrial upscaling

- Printing of functional electrodes for Medtech, Biotech or point of care devices



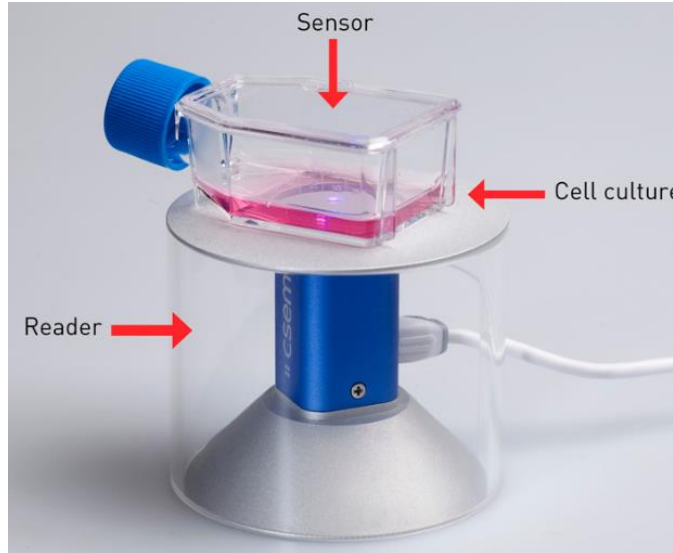
- State-of-the art: sputtered, laser cut electrodes
- Trends:



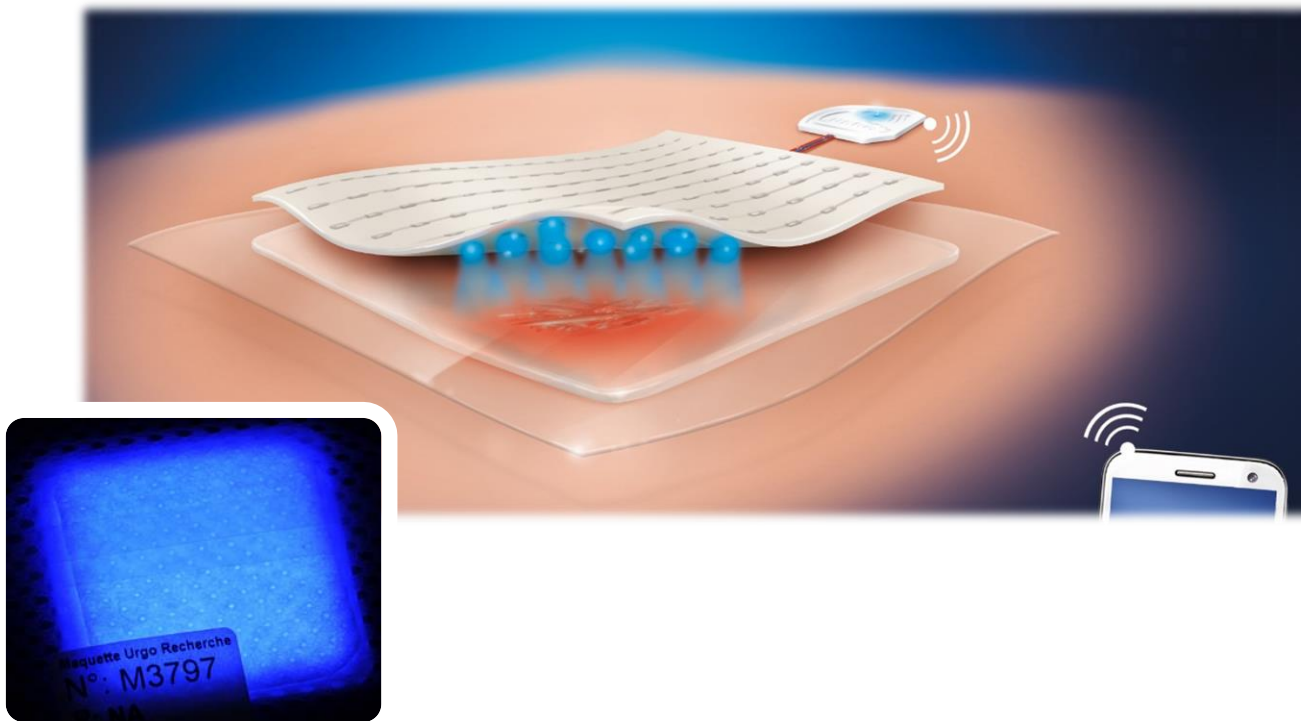
From sheet to sheet
to high throughput roll-to-
roll printing of electrodes



DEMOX—a miniature optical oxygen sensor



Light therapy for chronic wounds



Light therapy for chronic wounds



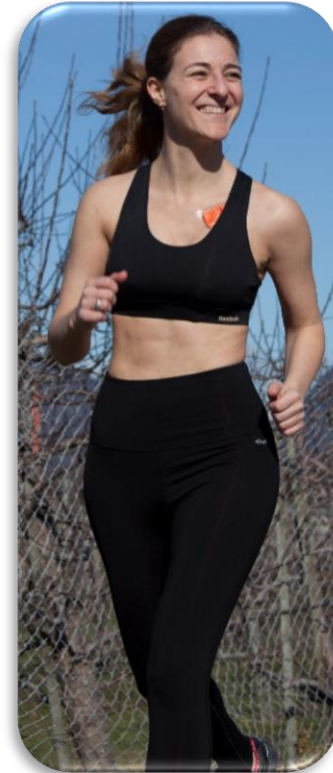
WeST: wearable sweat tracker



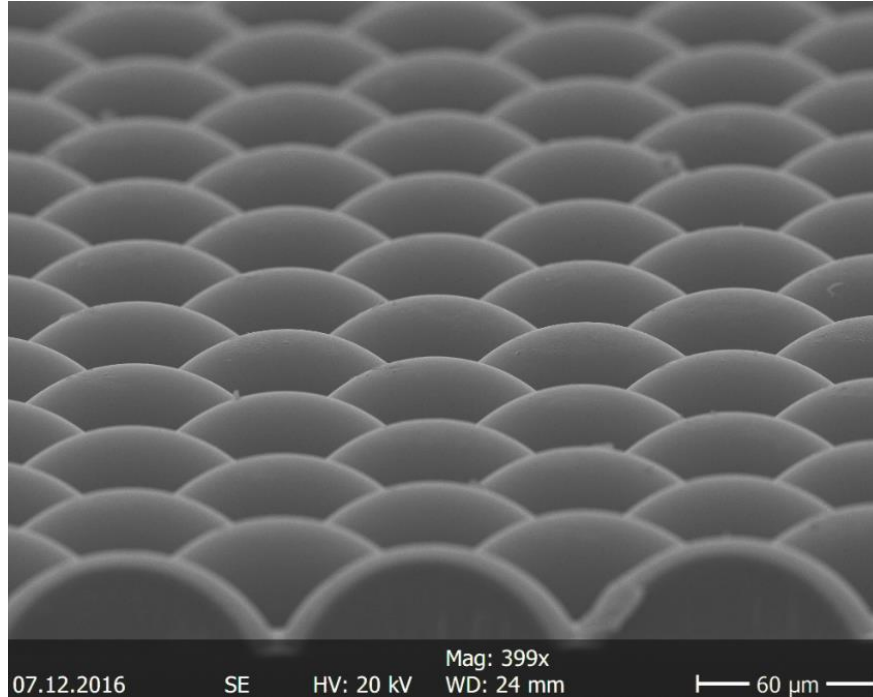
re-usable unit



consumable unit



Microlens arrays

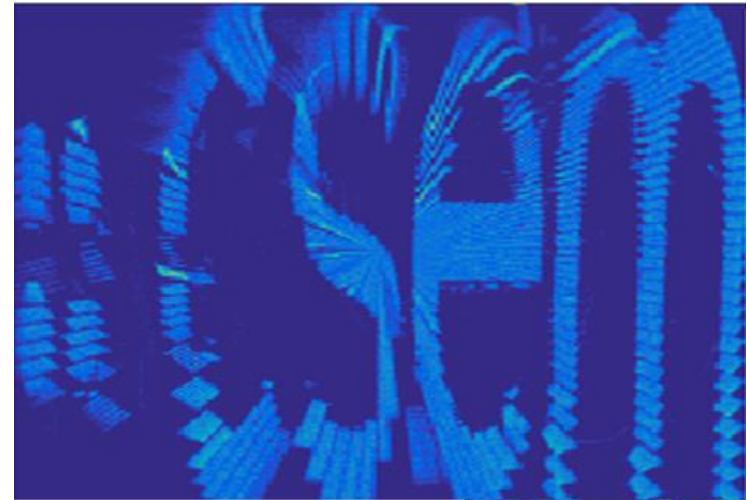
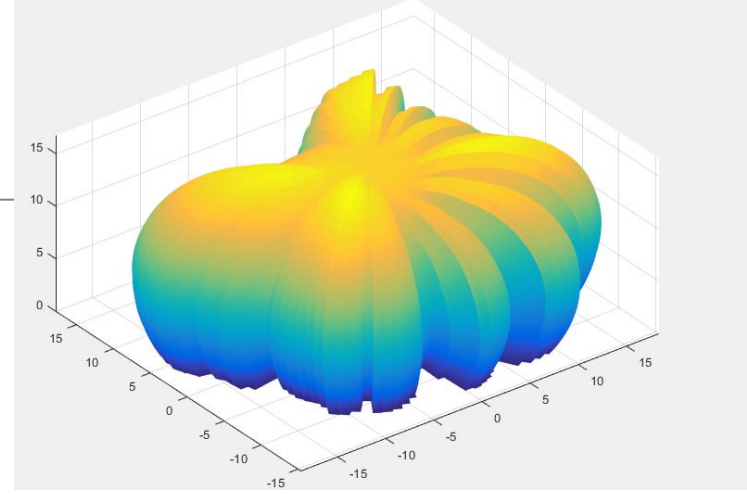


Free-form optics

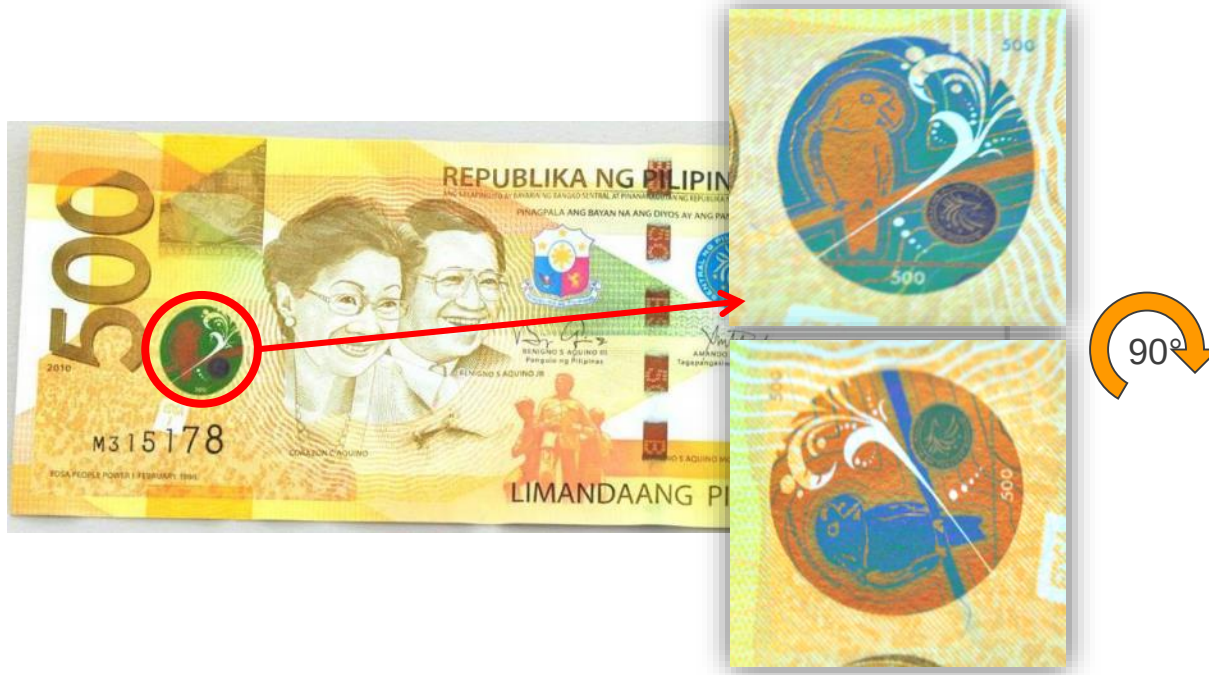
- Complex illumination requires complex optical systems
- Complex systems:
 - Complex arrangements of simple (standard) components
 - Simple arrangements of complex (freeform) optical components

Free-form optics

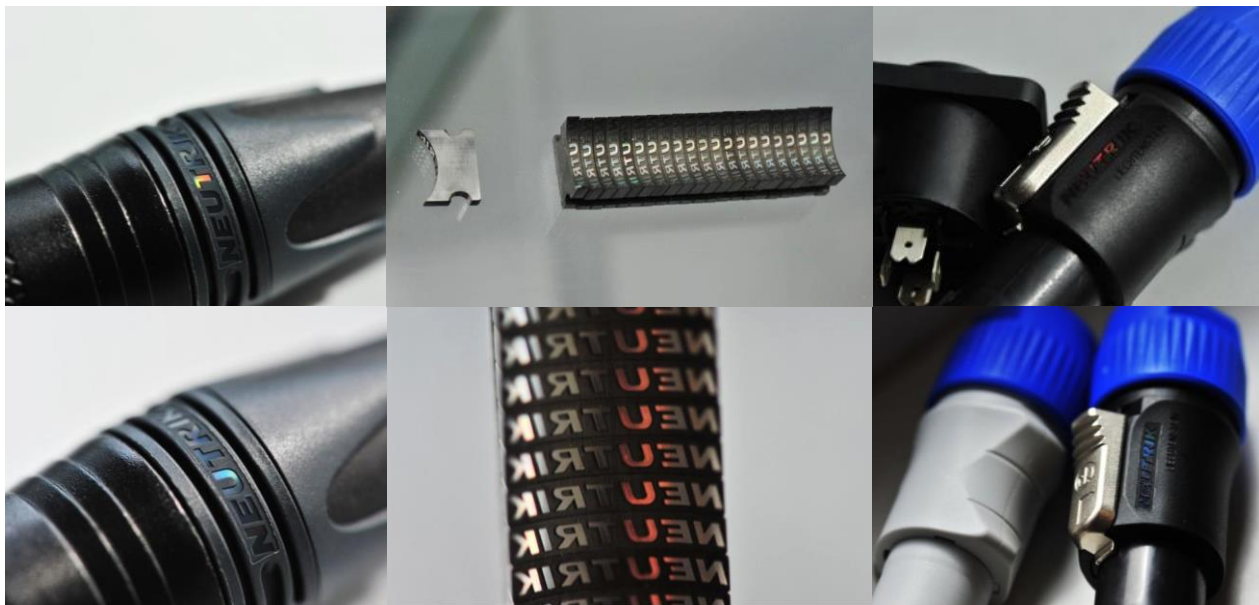
- Freeform components offer:
 - Lower number of components → easier Integration
 - Smaller components → smaller footprint
- The design of freeform components is challenging
- **Design software developed**



High-security features on banknotes

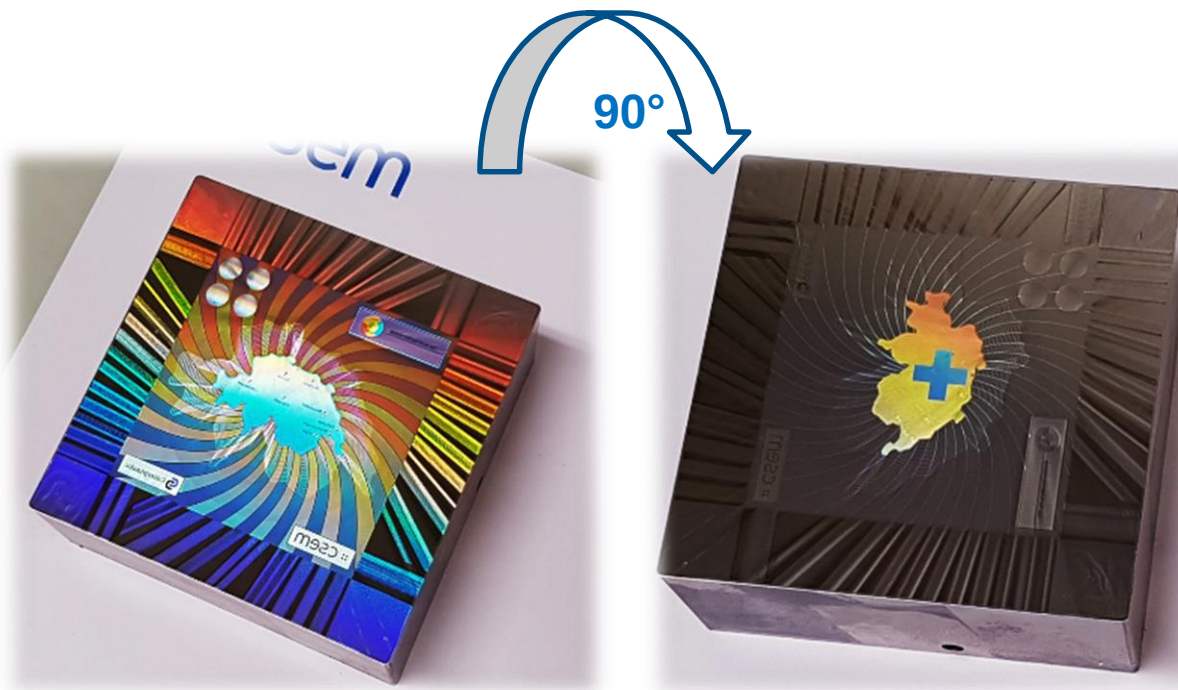


Production of steel tools



> 40 Mio parts fabricated with CSEM's injection molding tools (no copies)

Newest steel tool developments





Security & Brand Protection also in chocolate...



Tun Basel 2017

Thank you for your attention!

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