

Introduction to CSEM

Christoph Joder,
Head Regional Dev. & Relations NW-CH

Dr. Vincent Revol,
Head Research & Biz. Development
Life Science Technologies



life sciences
cluster basel

Eine Initiative
der Handelskammer
beider Basel

World 's first
quartz wristwatch

1969
December 25th



Photos Credits: Seiko Watch Corporation

Bridging the gap between Science and Industry



CSEM at a glance



89.2

Turnover
(Mio. CHF)



540

Employees



43

Nationalities



4118

Years of
Belonging



212

Industrial
clients



219

Patent
families



44

Spin-Offs
(since 1984)

Our **mission** – Technology Development & Transfer

Development and transfer of world-class (micro-) technologies to the industrial sector
– in Switzerland, as a priority – in order to reinforce its competitive advantage.

- Cooperation agreements with established companies
- Collaboration with startups
- Encouraging the creation of spin-offs from CSEM

5

[Corporate Website](#) – [CSEM-Videos](#)
[Scientific & Technical Reports](#) – [General Annual Reports](#)

[Brochure «Tools for Life Sciences»](#)

Close to **industry**, leveraging Swiss academic research

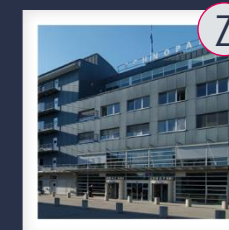
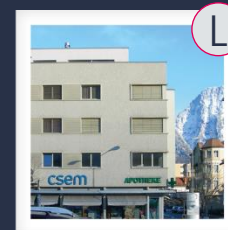
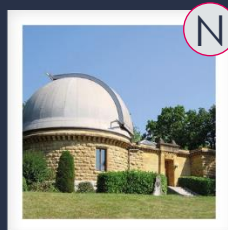
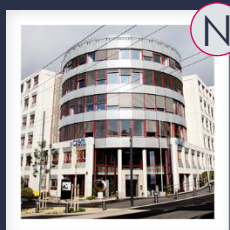
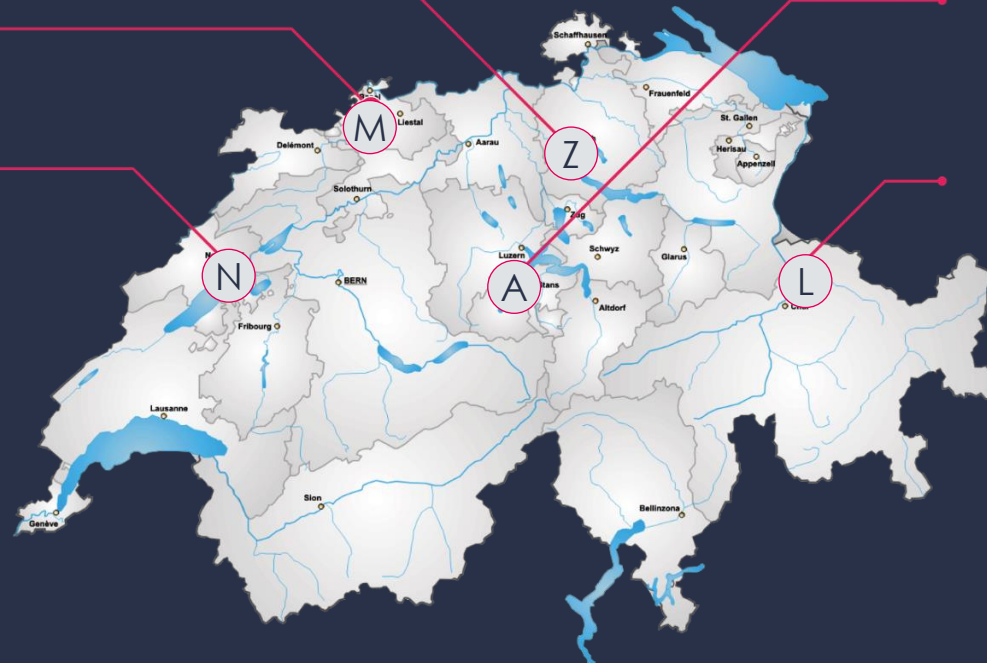
CSEM Zürich

CSEM Muttenz

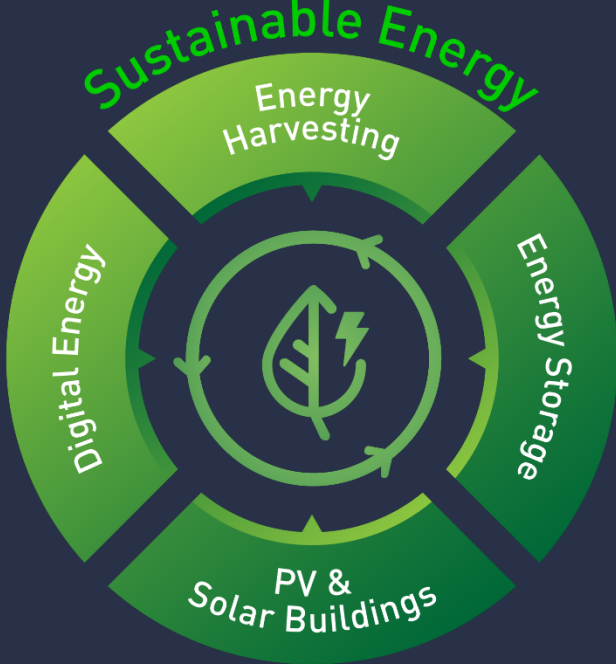
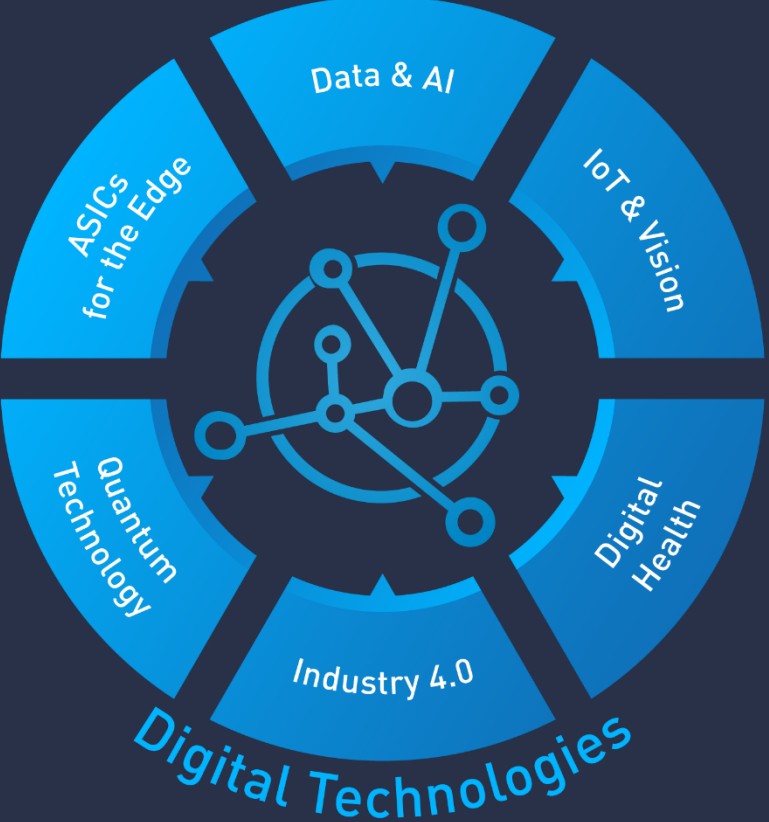
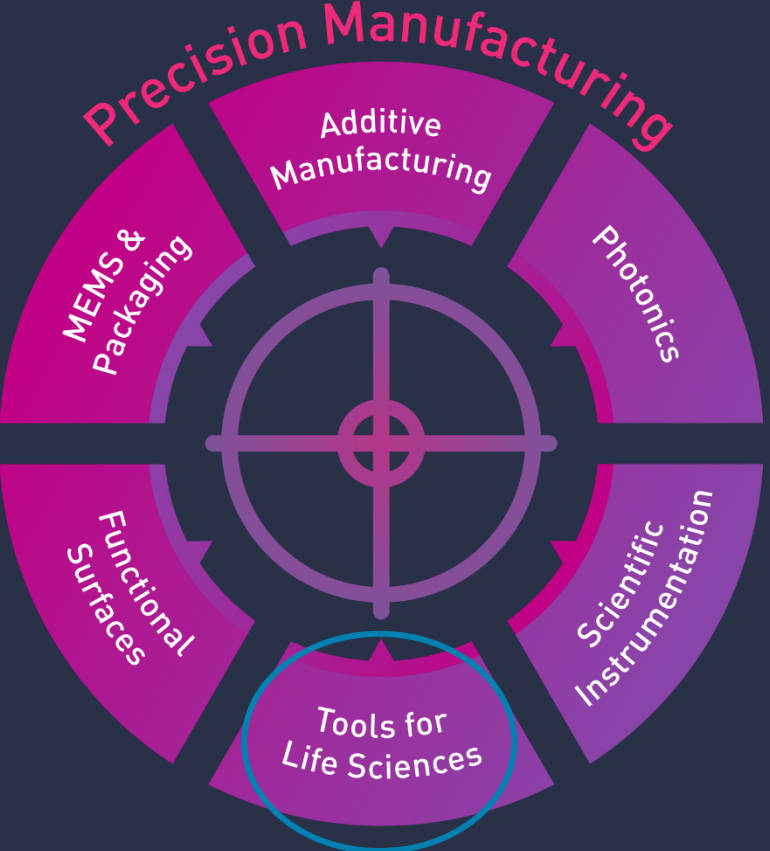
CSEM Neuchâtel

CSEM Alpnach

CSEM Landquart



Technologies **in focus** at CSEM



Recent **success stories** of technology transfer

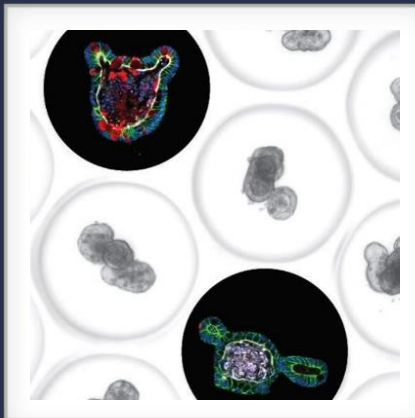
Ava

Fertility bracelet



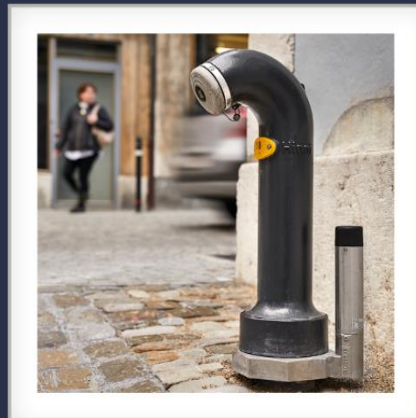
SUN bioscience

Standardized growth of organoids in large scale



Hinni

Saving water with precision leak detection system



STAT Peel

Monitoring Carbon Nano-Tube Exposure



ProtoShape

Additive manufacturing advances for aerospace



A blue-tinted laboratory scene featuring a pipette dispensing liquid into a petri dish. The background is filled with soft, out-of-focus lights and a futuristic digital interface with circular gauges and grid lines. The overall aesthetic is clean, modern, and scientific.

How can we support
your company?

christoph.joder@csem.ch

+41 79 439 7600 (mobile)



:: csem

Innovation partner for the
Life Science industry

#Personalized Healthcare

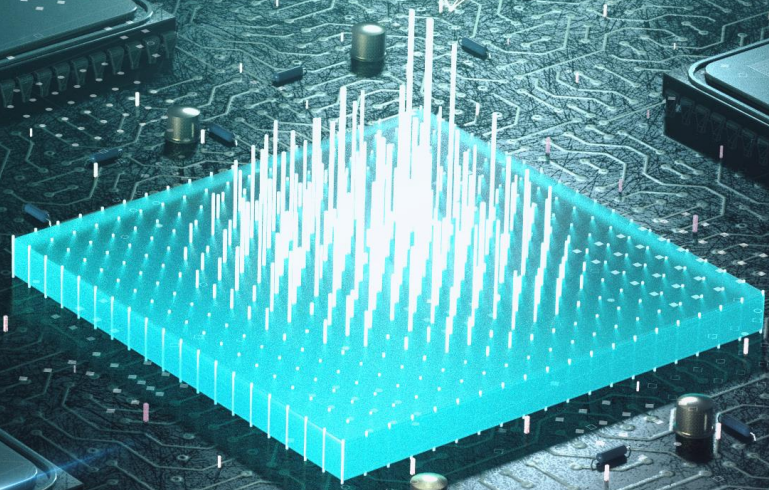
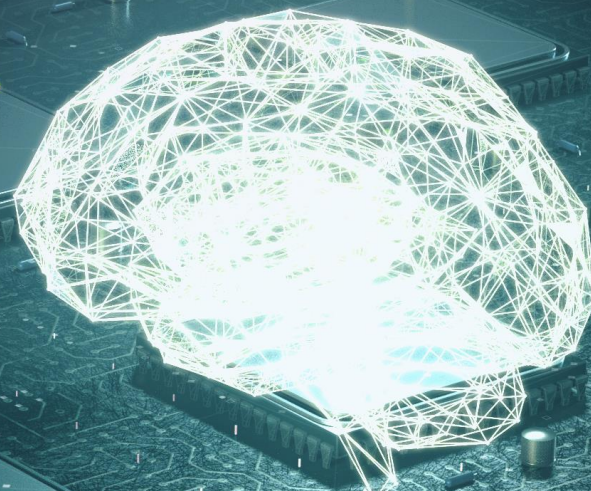
#Regenerative Medicine

#Point-of-care Diagnostics & Wearables

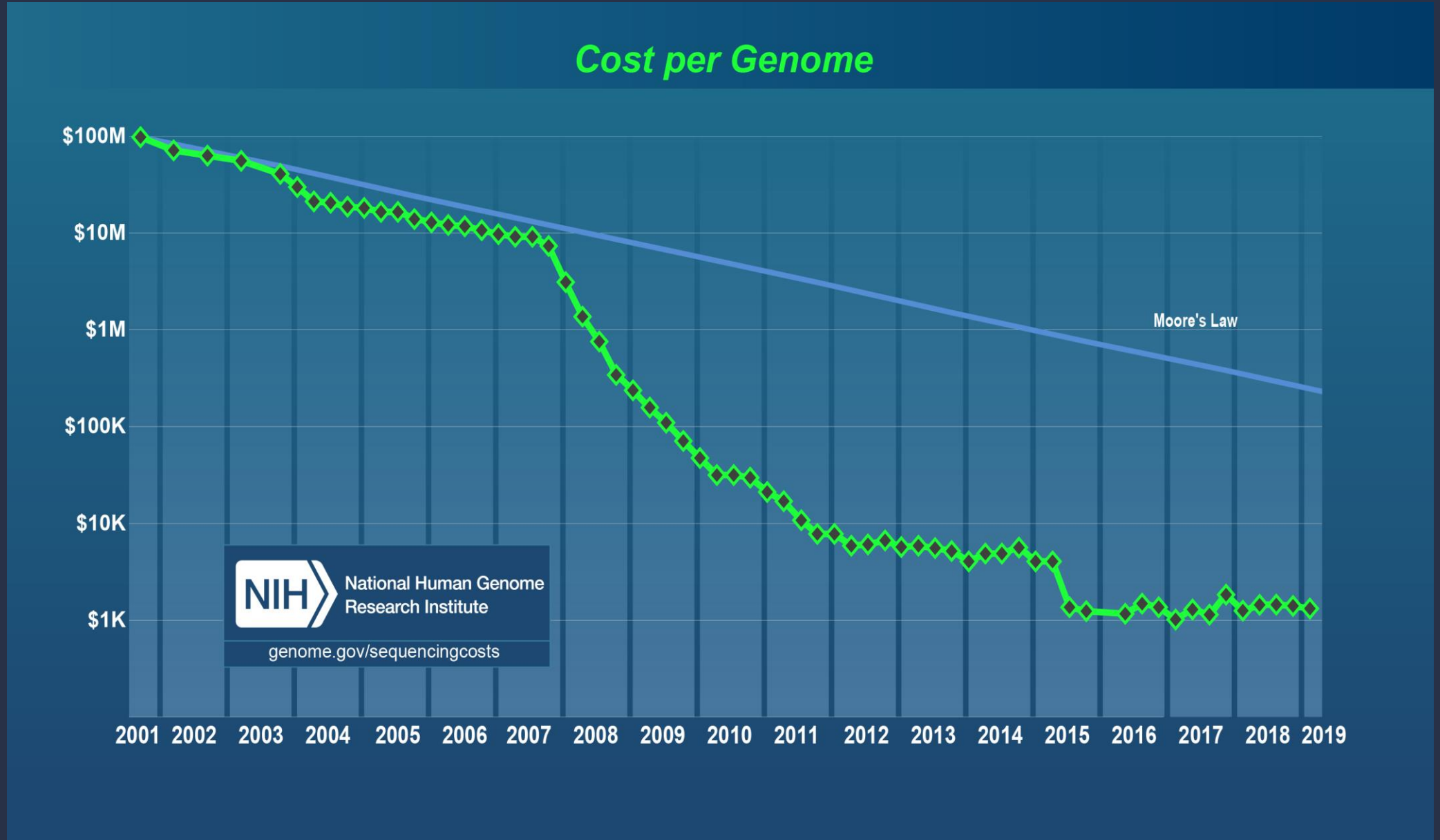
#Lab of the Future

#Organoids & Organ-on-Chips

CSEM – Innovation where technology meets life

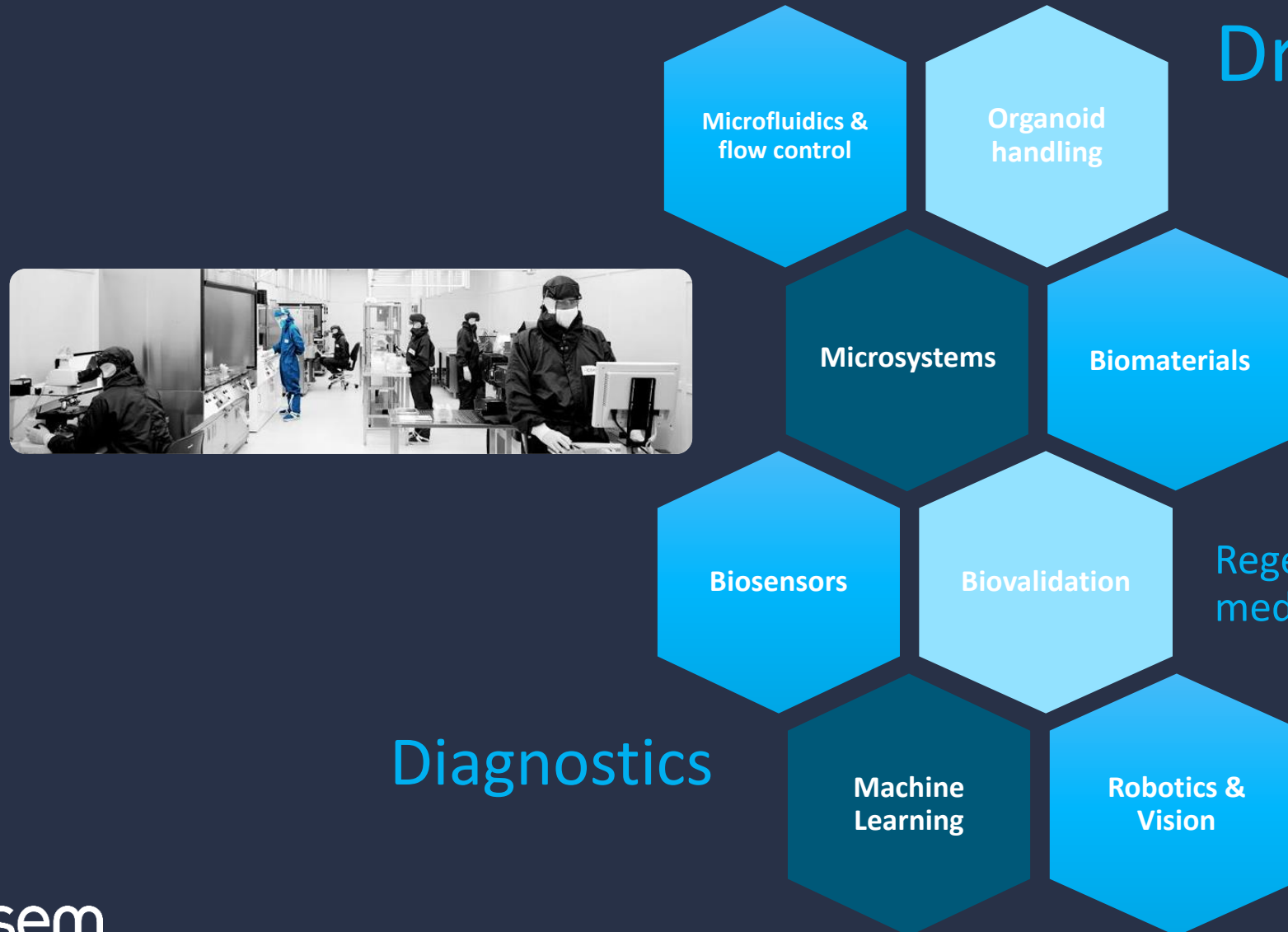


Why technology? Making better healthcare accessible



Bridging across disciplines

from the clean room to the biosafety lab



Drug screening



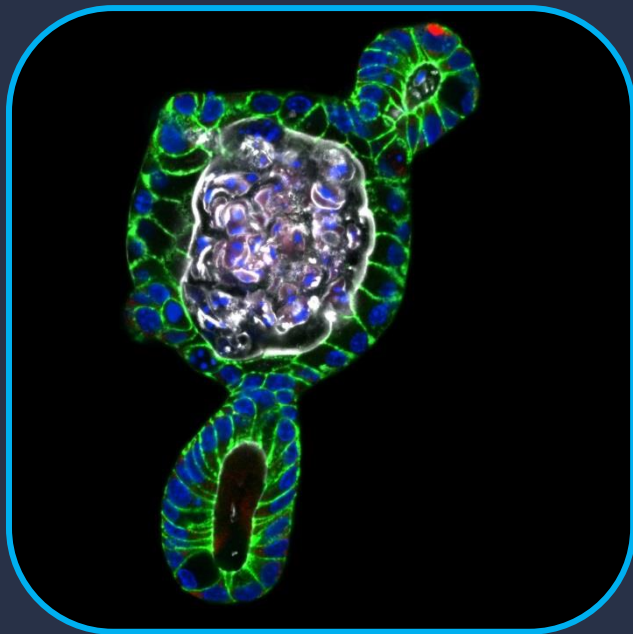
Regenerative medicine



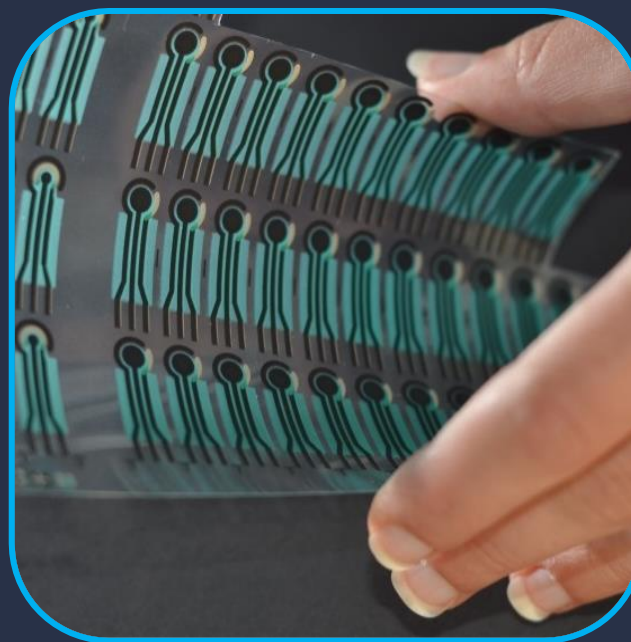
Tools for Life Sciences

« Develop new Tools by leveraging micro- and digital technologies with biology to enable innovative Life Science applications »

Cell Technologies



Biomonitoring



Lab Automation



Standardized organoid production Gri3D[®] platform



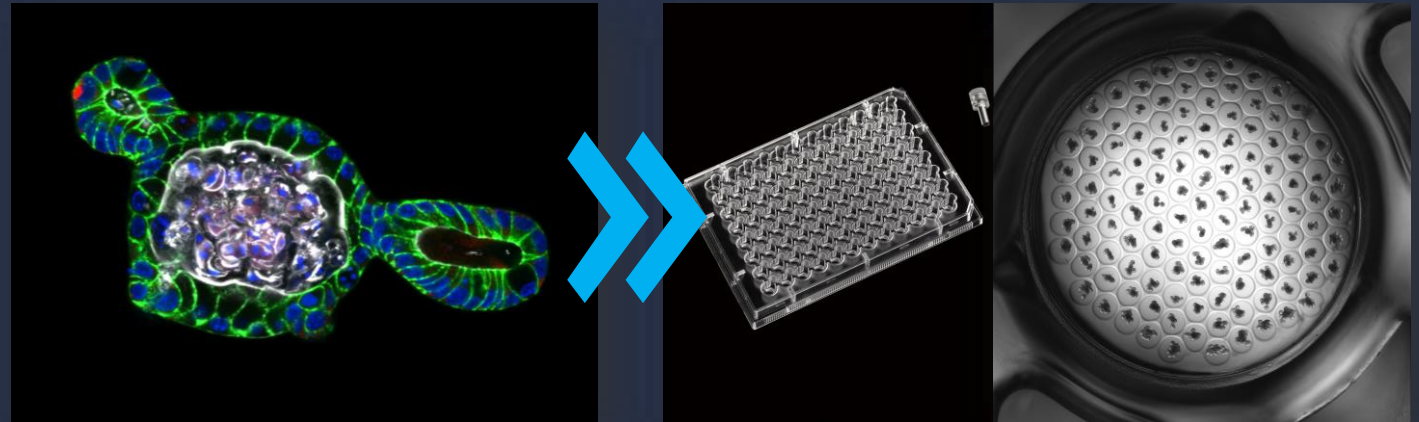
:: Automation

- Microplate custom solution
- Hydrogel microstructuration



:: Throughput

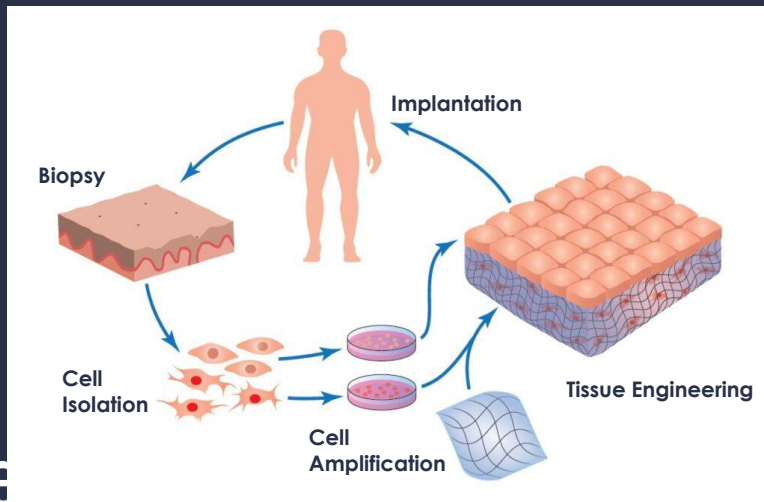
- Production of standardized organoids in large scale



Personalized skin graft



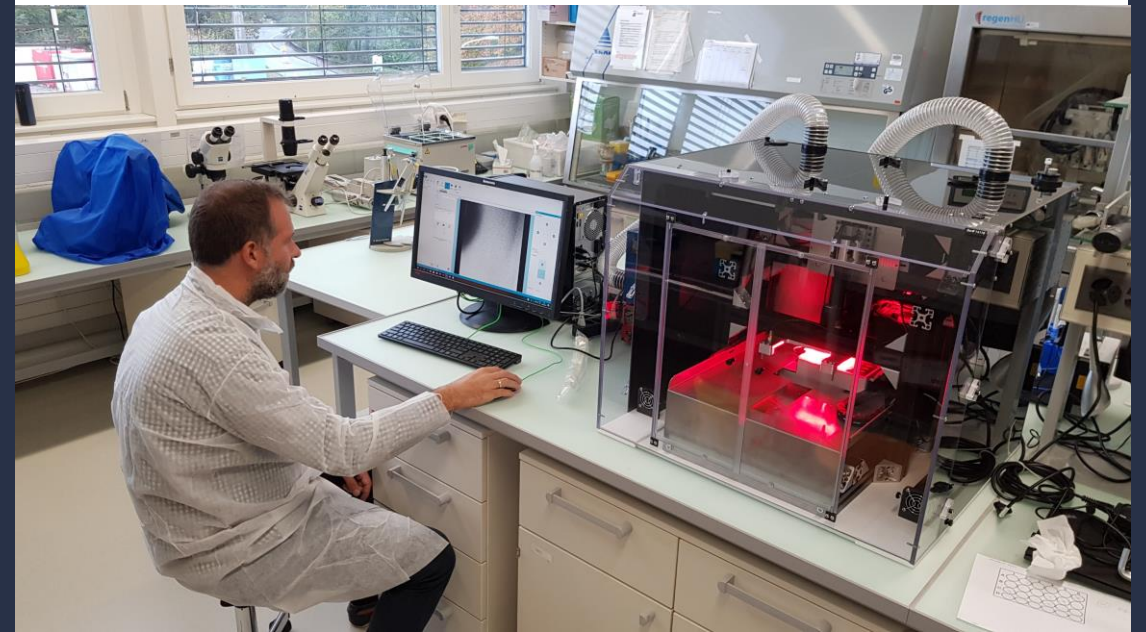
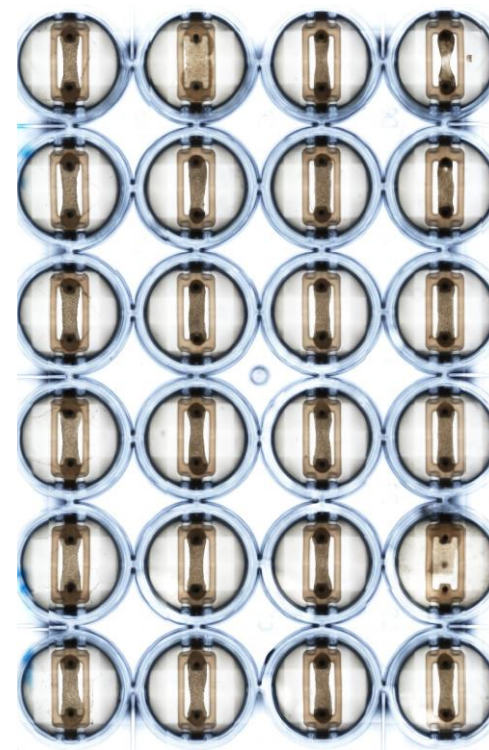
- Cell and tissue engineering in closed environment
- Hydrogel processing & 3D cell culture
- Customized sterile labware and automated for 4 grafts in parallel



Muscle-on-Chip MuscleAnalyzer

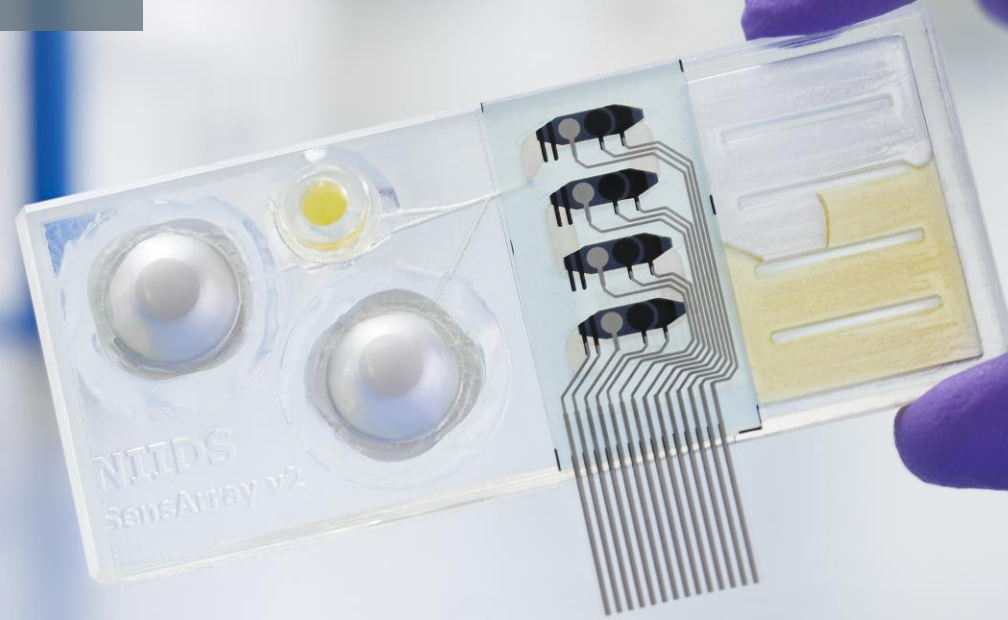


- 3D bioprinted human muscle models
- Automated contractility measurement via electrical stimulation and optical readout



Digital Urinalysis

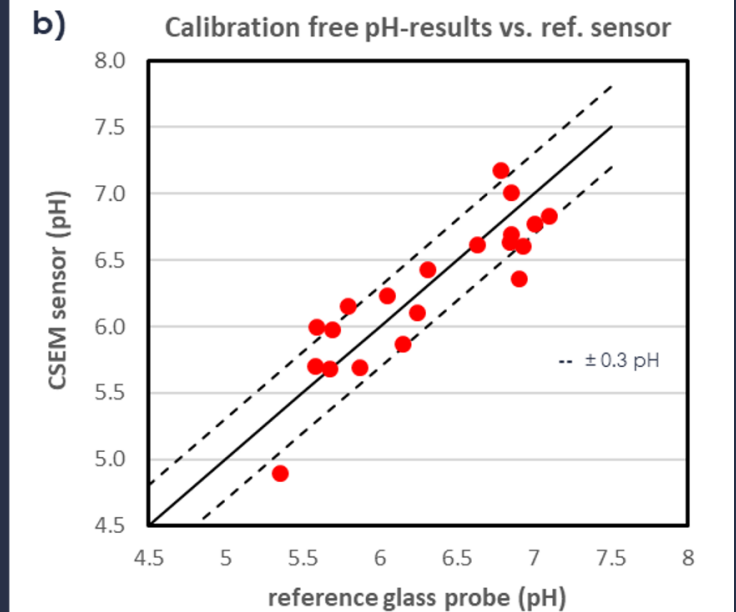
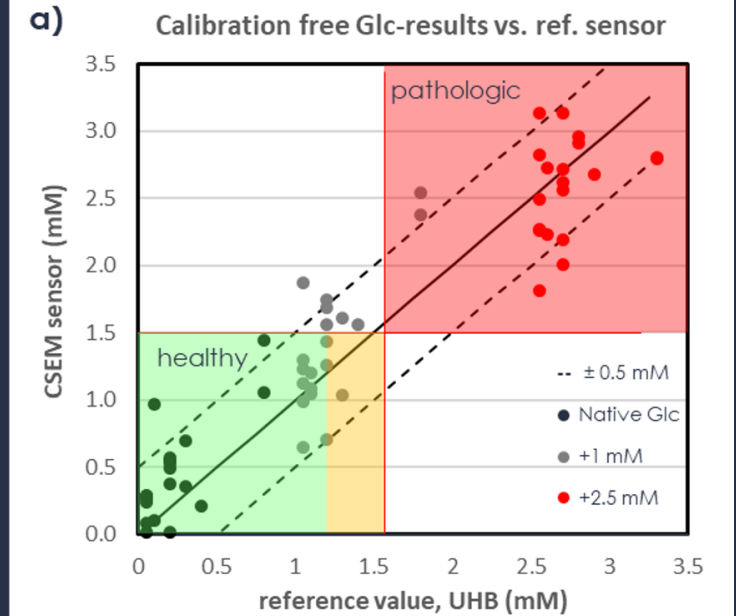
Electrochemical sensing
for quantitative urinalysis



Sensor platform for point-of-care or at-home monitoring



- :: Glucose (Glc)
- :: pH
- :: Sodium (Na^+)
- :: Potassium (K^+)

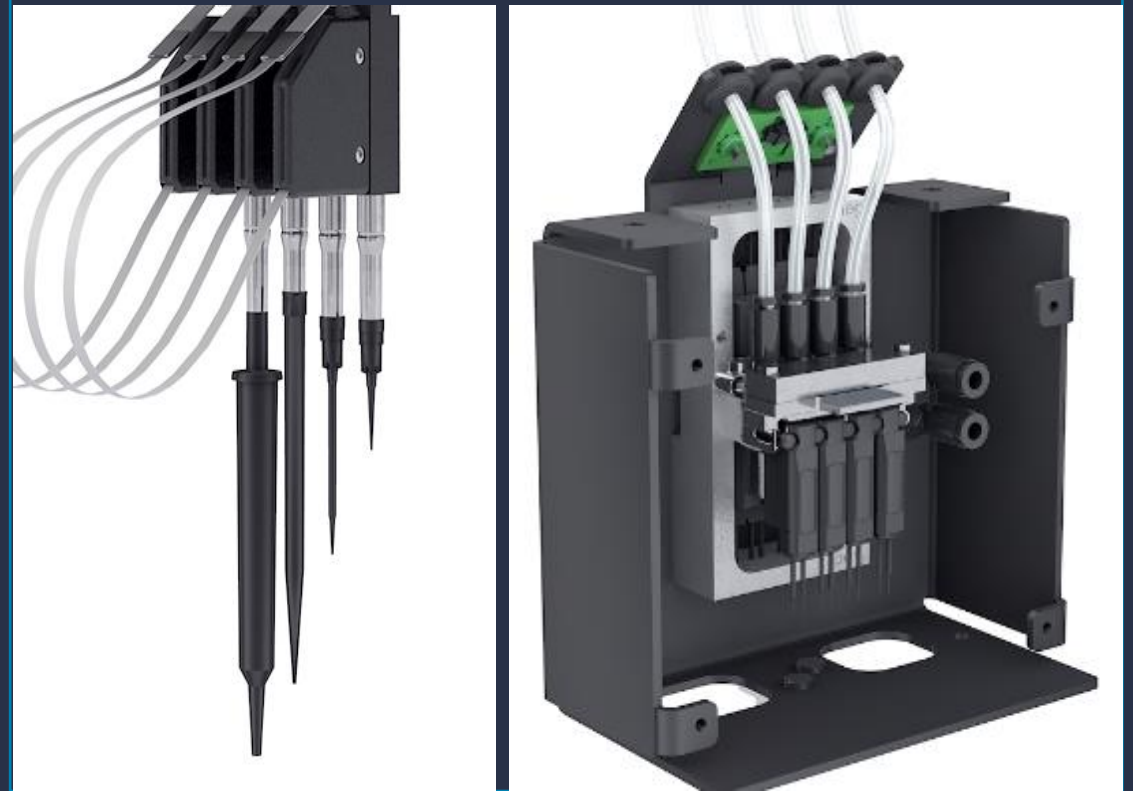


Liquid class free multi-channel pipetting

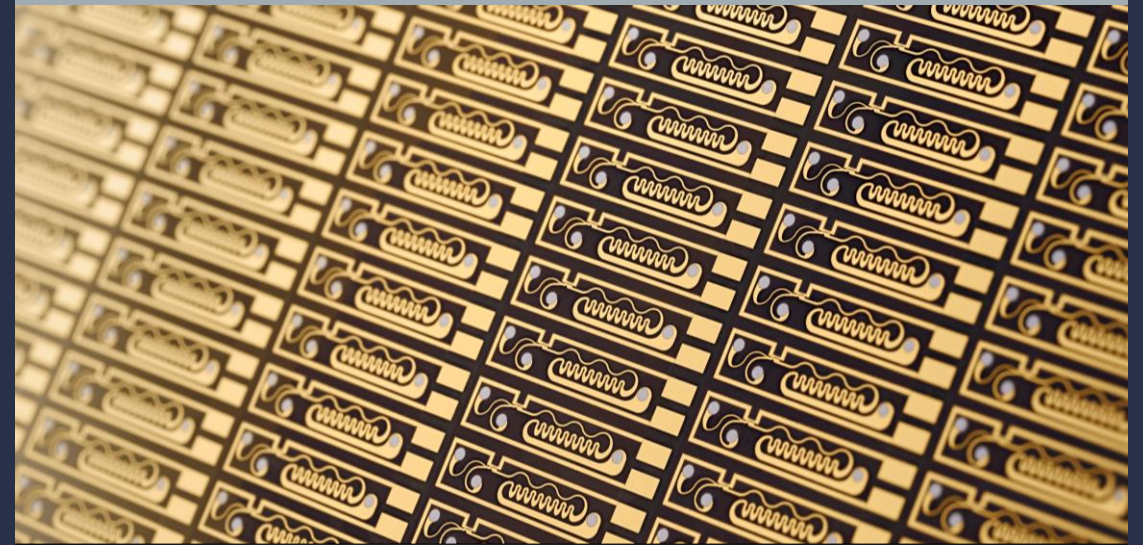


- Air restriction control using time-pressure liquid handling
- Key advantages
 - Compact
 - Large volume range
 - Environment compensation
 - Low maintenance
 - Integrated process monitoring

<https://www.tecan.com/thescene/cavro-magni-flex-automated-liquid-handling-development-platform-feature-cavro-air-restriction-pipettor-arp>



Industrialization & production of ultra-fast cell sorting devices (40'000 cells per second)



Development, industrialization, & production of microfluidic devices

- 150 mm wafer MEMS foundry with ISO-9001 certification
- Expertise in all processes involved in microfluidics, including SU8 lithography, PDMS casting, wafer-level bonding, or glass machining.
- We take your concept and bring it to an industrialization level, including ramp-up production.

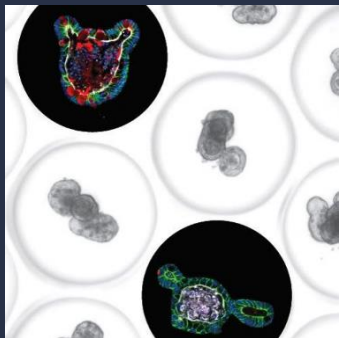
Success stories

Providing technology today enabling tomorrow's solutions

SUN bioscience

Standardized growth of organoids in large scale

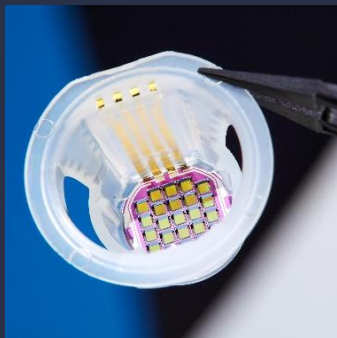
SUNBIOSCIENCE



SIMPLInext

Silicon nitride microporous permeable insert

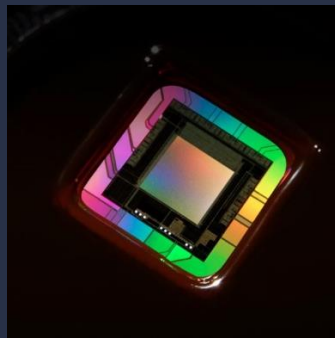
SiMPLI



3Brain

Imaging through high-resolution electrophysiology

3-Brain
HIGH RESOLUTION TECHNOLOGY



IBIDI

Optical gas sensor for cell culture media

ibidi
cells in focus



LIS

Non-invasive gas sensing in incubation chambers

Life Imaging Services
DON'T WATCH IT, MEASURE IT



INVENesis

Bioassays for drug testing in animal health

INVENesis





21 OCTOBER 2021 SWISS SYMPOSIUM IN
POINT-OF-CARE DIAGNOSTICS

www.pocdx.ch - Davos

 **csem**

toolpoint
FOR LAB SCIENCE

 **MICROCITY**
NEUCHÂTEL INNOVATION

PRECISION LIQUID HANDLING
WORKSHOP - NOVEMBER 24



Networking
Event Series

powered by
INNOVATION

23



SAVE THE DATE
**NEXT GEN ORGAN-ON-CHIP &
ORGANOIDS**

26 - 27 JAN 2022
GENEVA



Dr. Vincent Revol

vincent.revol@csem.ch



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TOOLS for LIFE SCIENCES