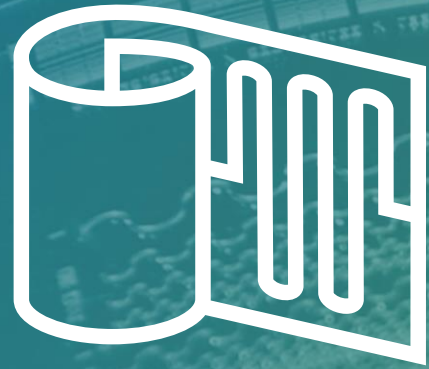




Microfluidics InnovationHub

We get Microfluidics rolling

MIH - BNN Welcome Webinar



Microfluidics Innovation Hub

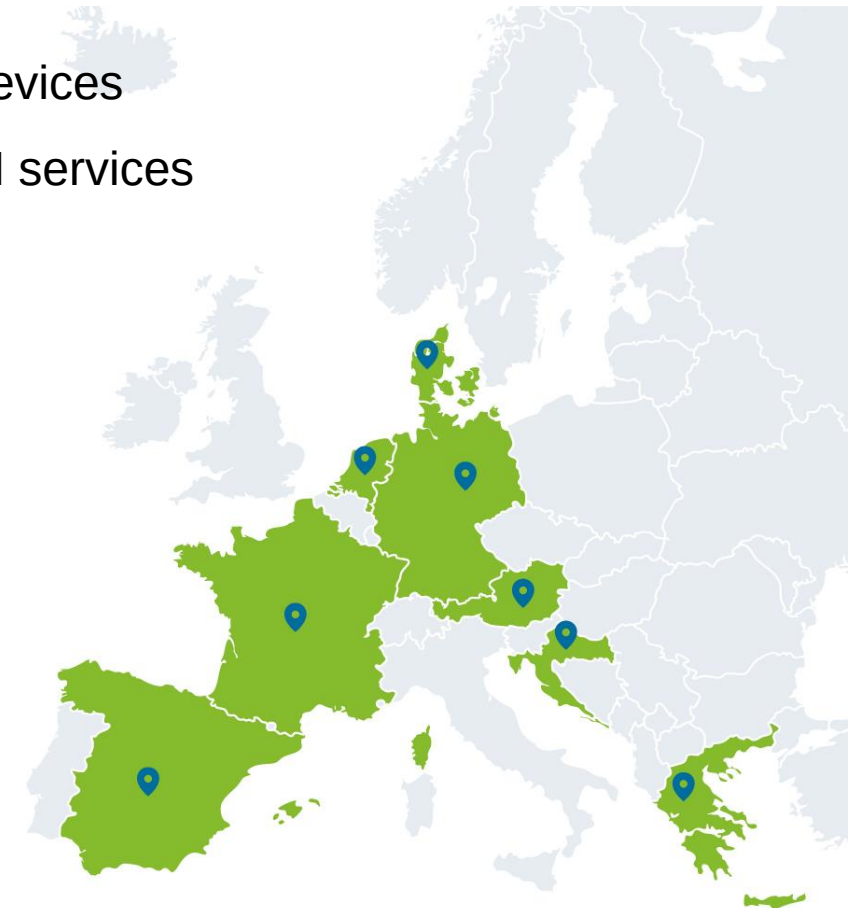
- Overview
- Services
- Funding Opportunities

Contact:
Ronald.Tingl@microfluidicshub.eu
Mobile: +43 664 1538709

NextGenMicrofluidics (NGM)

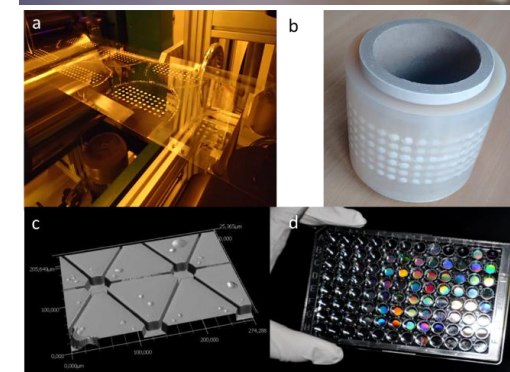
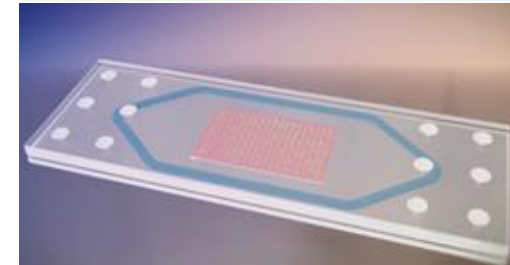
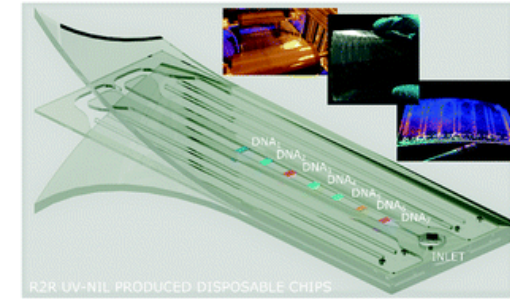
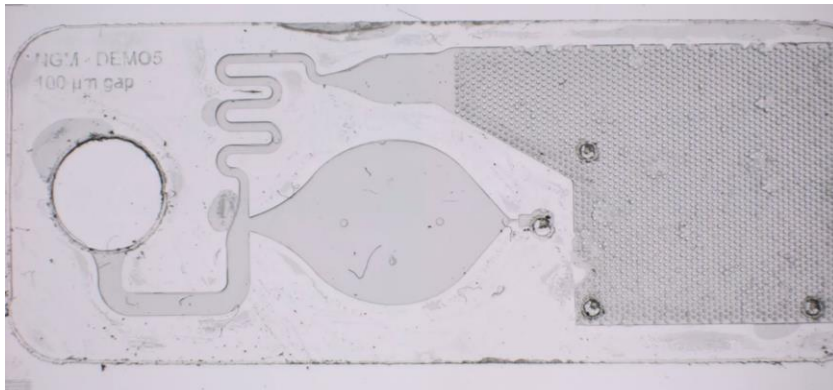
- NGM is an Open Innovation Test Bed consisting of 21 companies
- Worldwide biggest platform for upscaling and testing of microfluidic devices
- Microfluidics Innovation Hub (MIH) acts as Single-Entry Point to NGM services

Design & Simulation 	Process development  	Cell culture solutions  
Materials  	 	Research  
Electronics manufacturer 	Microfluidics development & manufacturing  	 
Bioprocess 	Medical sensors  	 

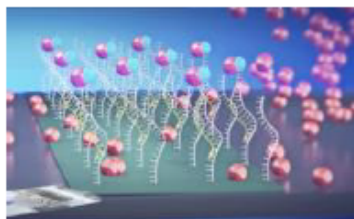
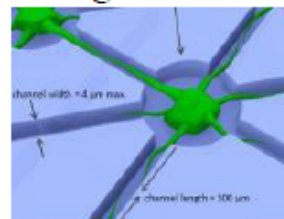
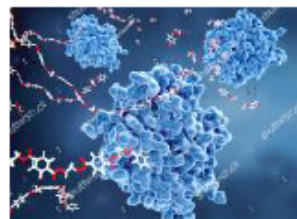


Talking Microfluidics

- we talk chips / cartridges / plates
- with microchannels, micro reaction chambers
- performing chemical, biochemical, biological processes
- useful for medical diagnostics, chemical analysis, environmental monitoring, cell culture devices
- Lab-on-Chip, Organ-on-Chip, Soil-on-chip, Point-of-care



Markets

Market	Agri-food and Environment	Medical Diagnostics / Veterinary Diagnostics / Life Science		Pharma	Bio(Chemical) Industry
Customer Segments / Industry branches	Agricultural cooperatives, food industry, environmental monitoring	Hospitals, doctor's office, physician clinics, diagnostic labs, patients, pharmacies, RTO's, universities, pharma-companies, veterinary applications		pharma R&D, Academic research	Enzyme producers for detergent products, nutra-ceuticals, food and food supplements
Value Proposition	Upscaling of microfluidic chip systems and (smart phone enabled) analysis				
Adressed by predefined Demo Case:	DEMO1: Biosensors for food safety monitoring (mycotoxins, pesticides in milk) 	DEMO2: Molecular diagnostics for MRSA and periodontitis 	DEMO3: Smart phone enabled home diagnostics for K in blood 	DEMO4: Cell culture devices for pharmaceutical testing 	DEMO5: Sensors for bio-process monitoring 



Solutions for food safety & Point of Care

Lab-in-a-Cartridge

The BiFlow Systems point-of-need solution relies on a disposable, modular microfluidic cartridge platform which processes liquid samples and allows for multiple methods of read-out and quantification.

bi.FLOW
systems

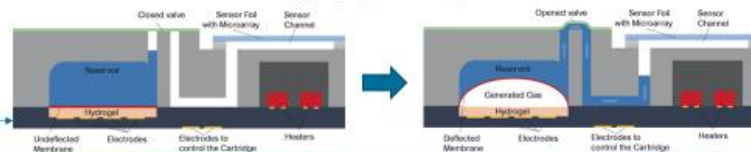
PCB layer with
Screen-printed
Electrodes
tecnalia



Cartridge features

- ✓ On-chip reagent storage, pumping and heating (no tubing or external pumps)
- ✓ Multiple biochemical and molecular assays possible, multiple read-out options (fluorescence, luminescence, electrochemical)
- ✓ Non-expert operation
- ✓ Multiplex and quantitative read-out

On-Chip pumping and heating mechanism

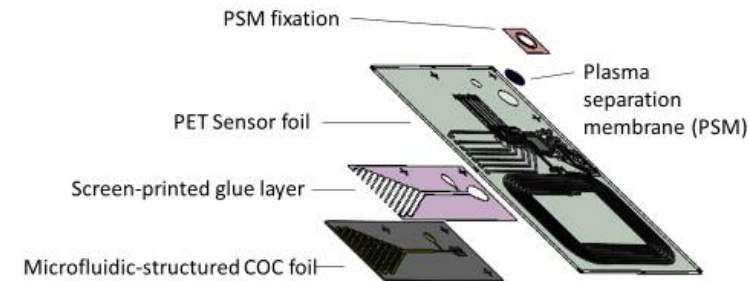


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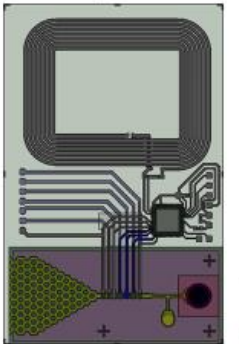
PoC Solution

Integrated PoC Solution comprises of a COC foil with microfluidic channels, bonded to a PET sensor foil with electrochemical sensors/

- Foils are bonded together using a screen printed glue layer
- Plasma separation membrane is fixed onto the inlet for processing of raw blood



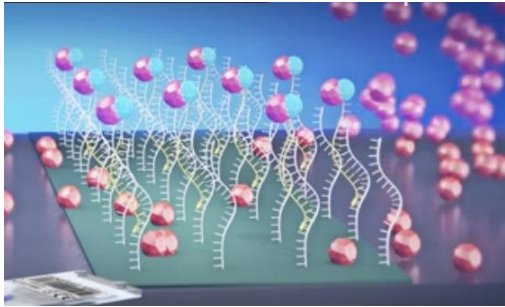
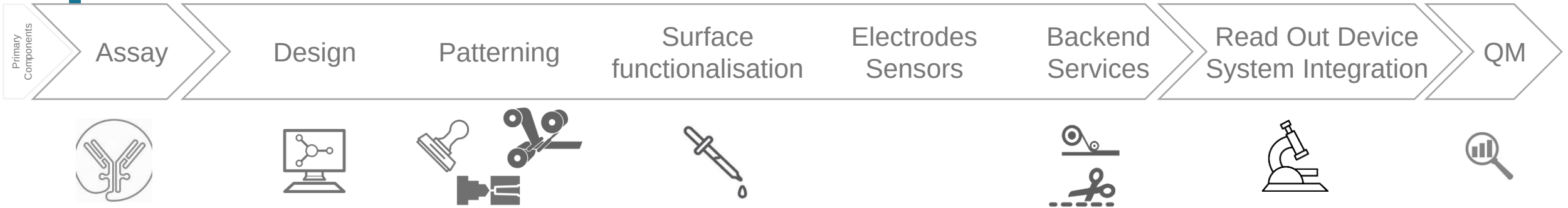
Integrated potassium
sensing solution



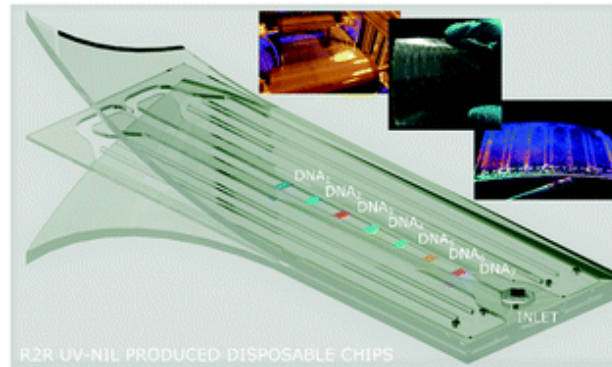
Microfluidics
InnovationHub

7

MIH Service Portfolio



IVD - ELISA, LAMP, PCR
ENZYME Detection
CELL analysis
Water, Food analysis



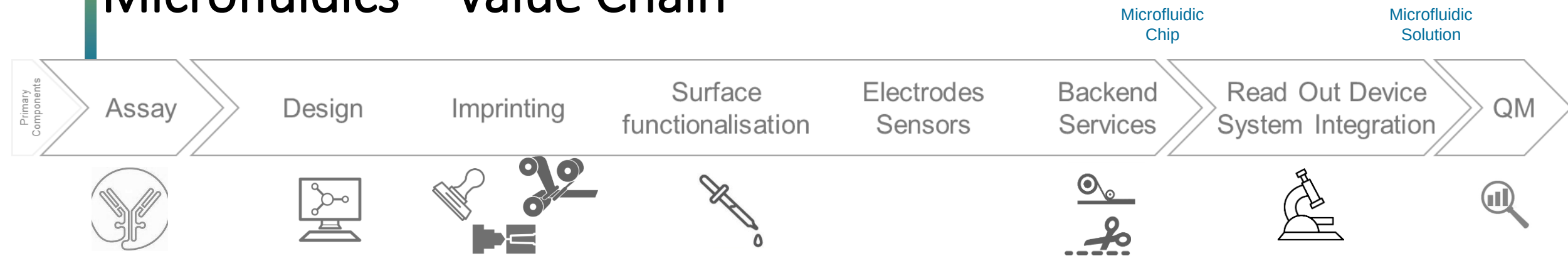
Active & Passive Microfluidics
Single units to millions of units
From Milling over Inj. Mold to Roll-to-roll

Microfluidic
Chip



Microfluidic
Solution

Microfluidics – Value Chain



Industrial

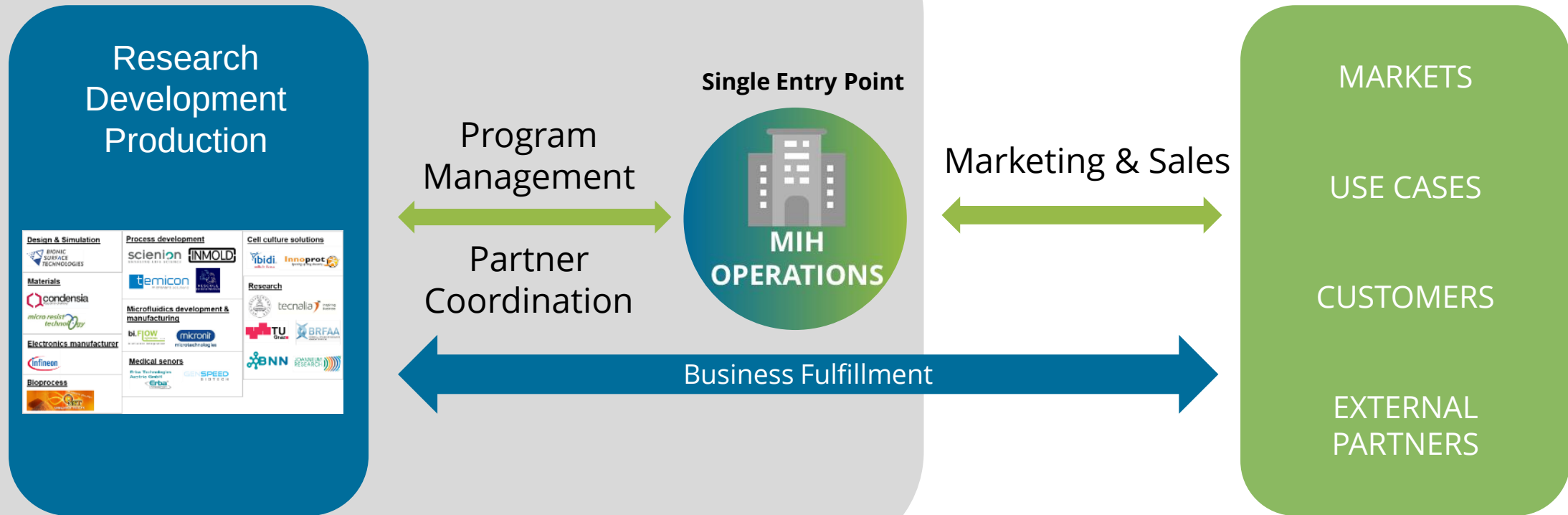


RTOs



MIH – Single Entry Point to NGM Services

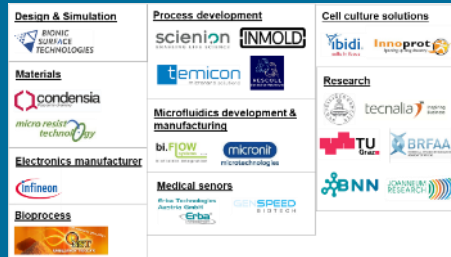
MIH is a non-profit association that includes 20 NGM members



MIH – Single Entry Point to NGM Services

MIH is a non-profit association that includes 20 NGM members

Research Development Production



H2020 Partners (e.g. PhotonHub)

Commercialization of Demo Case

Lead Identification

Conferences, Trade Shows

Online Awareness Campaigns

Open Calls

Matchmaking Platforms

VC Network

MARKETS

USE CASES

CUSTOMERS

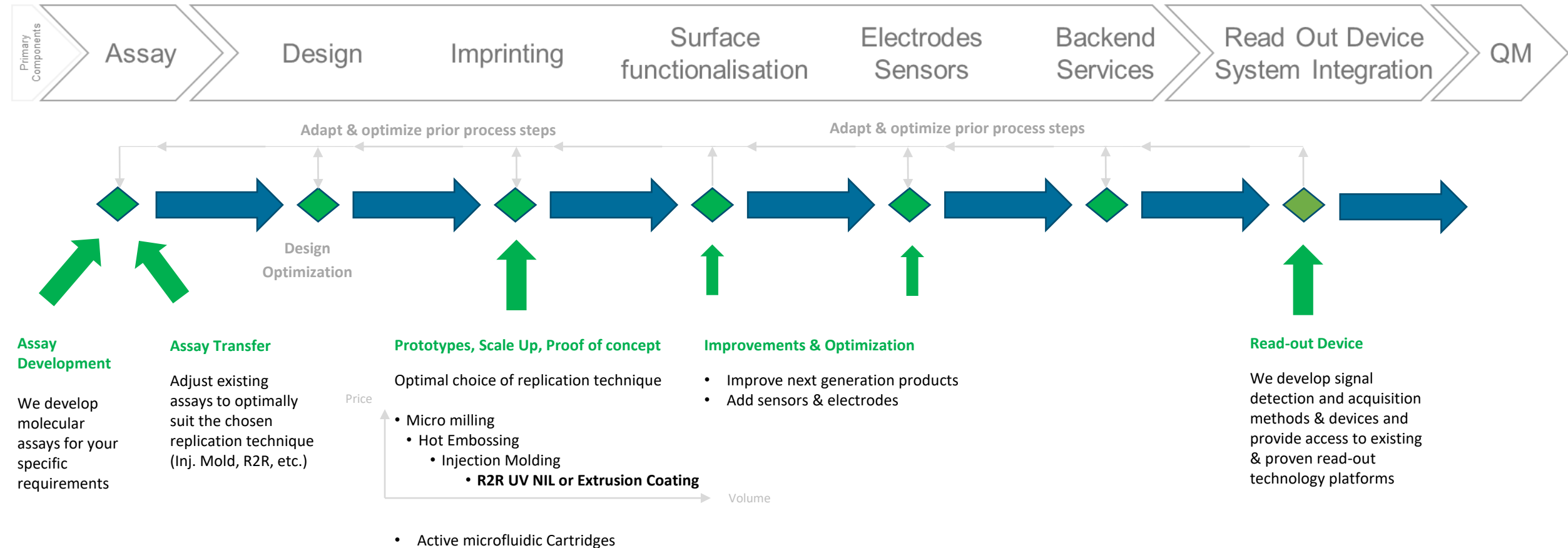
EXTERNAL PARTNERS

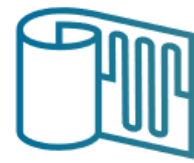


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MIH – Typical Service Entry Points

Consulting -- Project Management – Special Projects





Microfluidics
InnovationHub

WE DEVELOP AND PRODUCE **Microfluidic Lab-on-a-Foil Systems**



Single entry point to
research &
development services



Comprehensive
service
portfolio



Fast
prototyping
and scale up



Multiple
funding
opportunities



Quality
assurance

Primary
Components

Assay

Design

Imprinting

Surface
functionalisation

Electrodes
Sensors

Backend
Services

Read Out Device
System Integration

QM



Microfluidics Innovation Hub is the single entry point of the European project NextGenMicrofluidics (www.nextgenmicrofluidics.eu). NextGenMicrofluidics has received funding from the European Union's HORIZON 2020 research & innovation programme under grant agreement no. 862092.

WE DEVELOP AND PRODUCE **Microfluidic Lab-on-a-Foil Systems**



Single entry point to
research & development
services



Comprehensive
service portfolio



Fast prototyping
and scale up



Multiple funding
opportunities



Quality
assurance

We offer funding to scale up your application

- ✓ Open Call applications accepted on a rolling basis until September 2023
- ✓ Access to all services of the EU Horizon Europe project NextGenMicrofluidics
- ✓ Funding rate of up to 92% for European SMEs and 50% for Large Enterprises

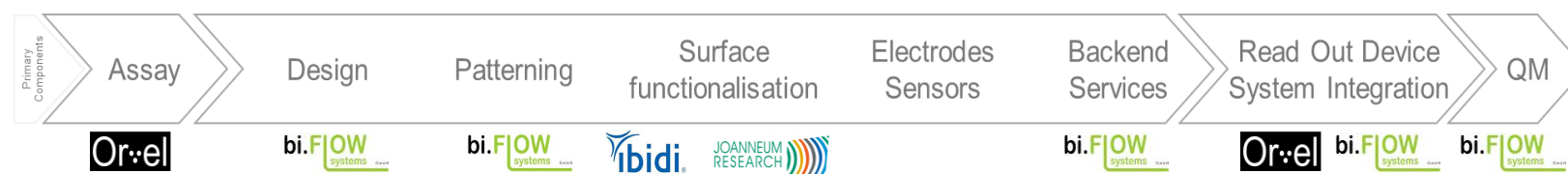


Competitive ELISA for high-sensitivity detection of mycotoxins Aflatoxin A1 / M1 in food products.

USP: Rapid and highly sensitive PoN testing for food safety along the logistical chain has the potential to greatly increase efficiency and reduce waste

Project	Sector	Subsector	Analytical Method	Analytical Sample	Analytical Target	PoN
OREL	Agro/Food	Food Safety	Immuno - ELISA	Primary goods - grain	Aflatoxin M1 / B1	Logistical chain

Profile	Slovenia / Start-up
Budget	65 000
Status	On-going, M7/11
Lead	BF



Assay: Design and implementation



Or::el

Sensor foil: Supply and spotting



ibidi JOANNEUM RESEARCH

Microfluidic cartridge: Design, manufacture & assembly



bi.FLOW systems GmbH

Experimental assay validation



bi.FLOW systems GmbH Or::el



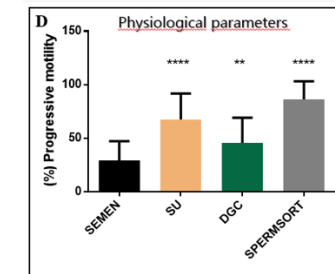
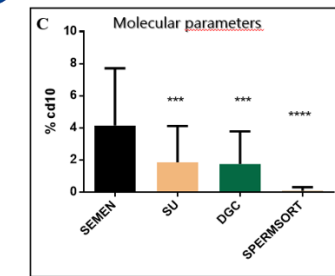
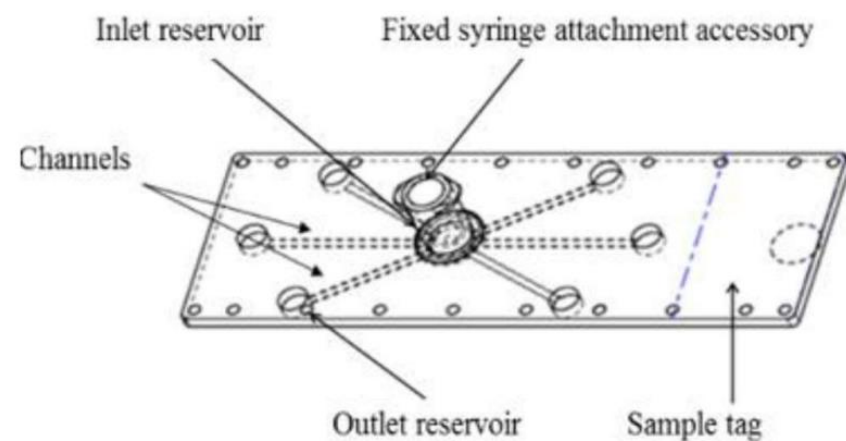
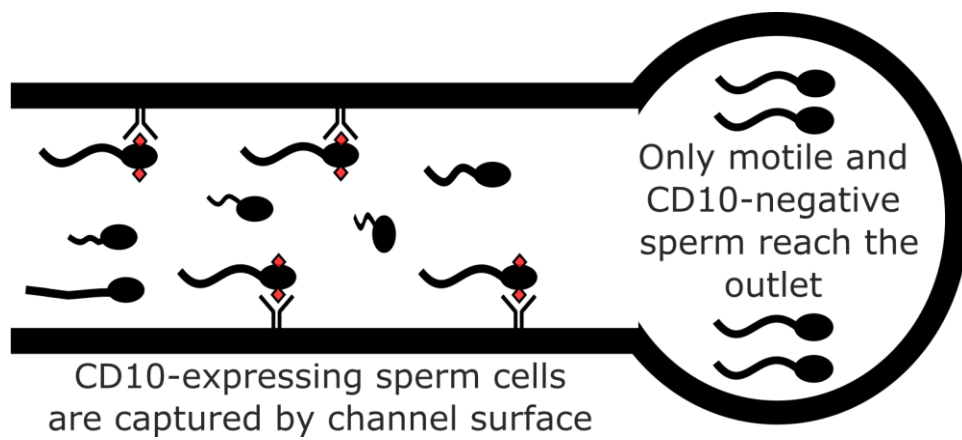
Microfluidics
InnovationHub

Sperm sorter Lab-on-a-foil based on simultaneous physiological and molecular selection.

USP: The ability to separate individual sperm cells with high viability phenotypes greatly increases the chance of success of ICSI-IVF and reduces number of rounds required

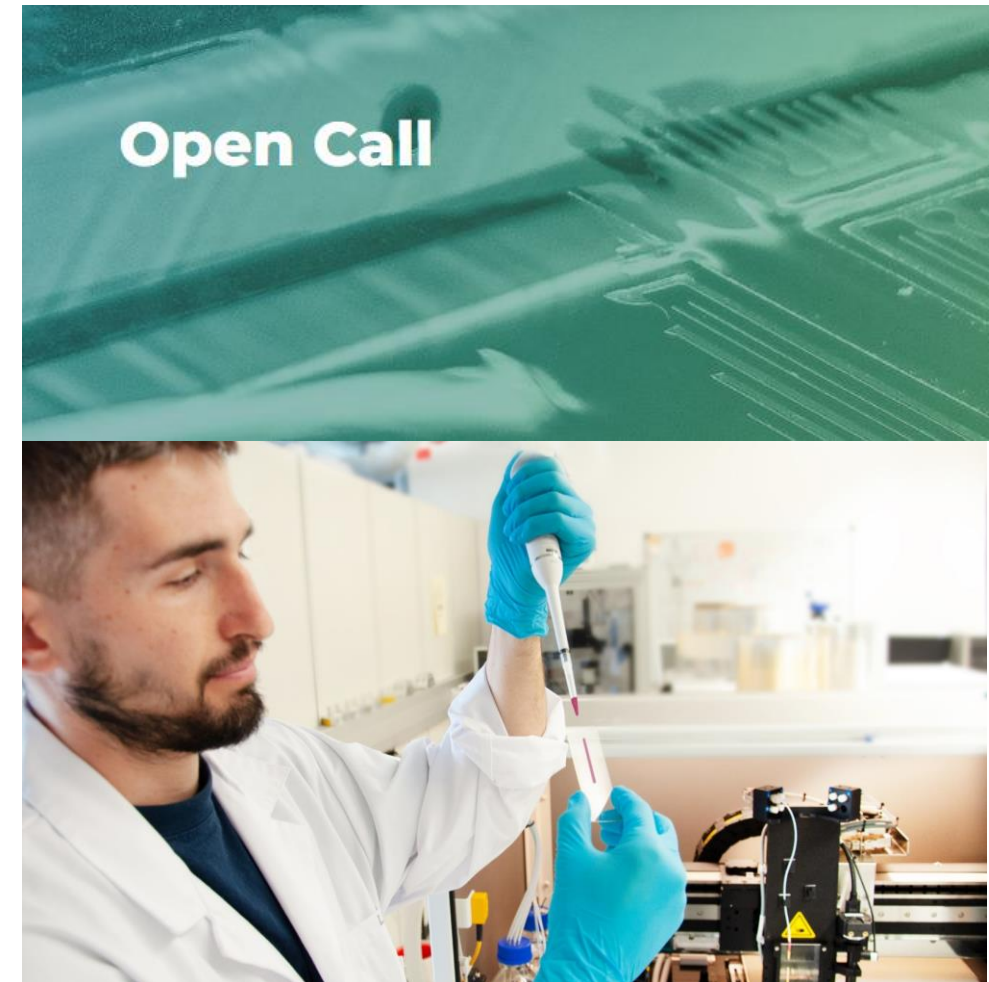
Project	Sector	Subsector	Analytical Method	Analytical Sample	Analytical Target	PoN
MEPRO	Clinical	IVF	Microfluidic / Immuno / Aptameric	Semen	Viable sperm cells	Clinic

Profile	Spain / Start-up
Budget	133 000
Status	M3/11
Lead	BRFAA



Accelerate your Microfluidic Innovation

- Addresses companies – SMEs and LEs
- Access to all services of the NGM OITB - min 2 partners involved
- Budget up to EUR 200.000
- Duration: 6 to 12 months
- Funding rate of up to 92% and 50% for European SMEs and Large Enterprises respectively
- Technology Readiness Level > 4 or Microfluidic System available
- Managed & coordinated by the MIH
- Details see: www.nextgenmicrofluidics.eu/open-call/



Why did we join BNN?

- Co-operation on specific medical/biochemical challenges
 - Provide & seek expert know-how
 - Discuss special joint non-EU research & development projects
- Explore business opportunities
- Explore future EU funding programs and identify potential partners or participate in programs
- Identify potential future members for MIH

THANK YOU!

*We look forward to working
with you*

Contact Us



www.microfluidicshub.eu



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8160 Weiz, Austria



info@microfluidicshub.eu

Follow Us



The Microfluidics Innovation Hub (MIH) is the single-entry point of the European project NextGenMicrofluidics (NGM) which has received funding from the European Union's HORIZON 2020 research & innovation programme under grant agreement no. 862092.