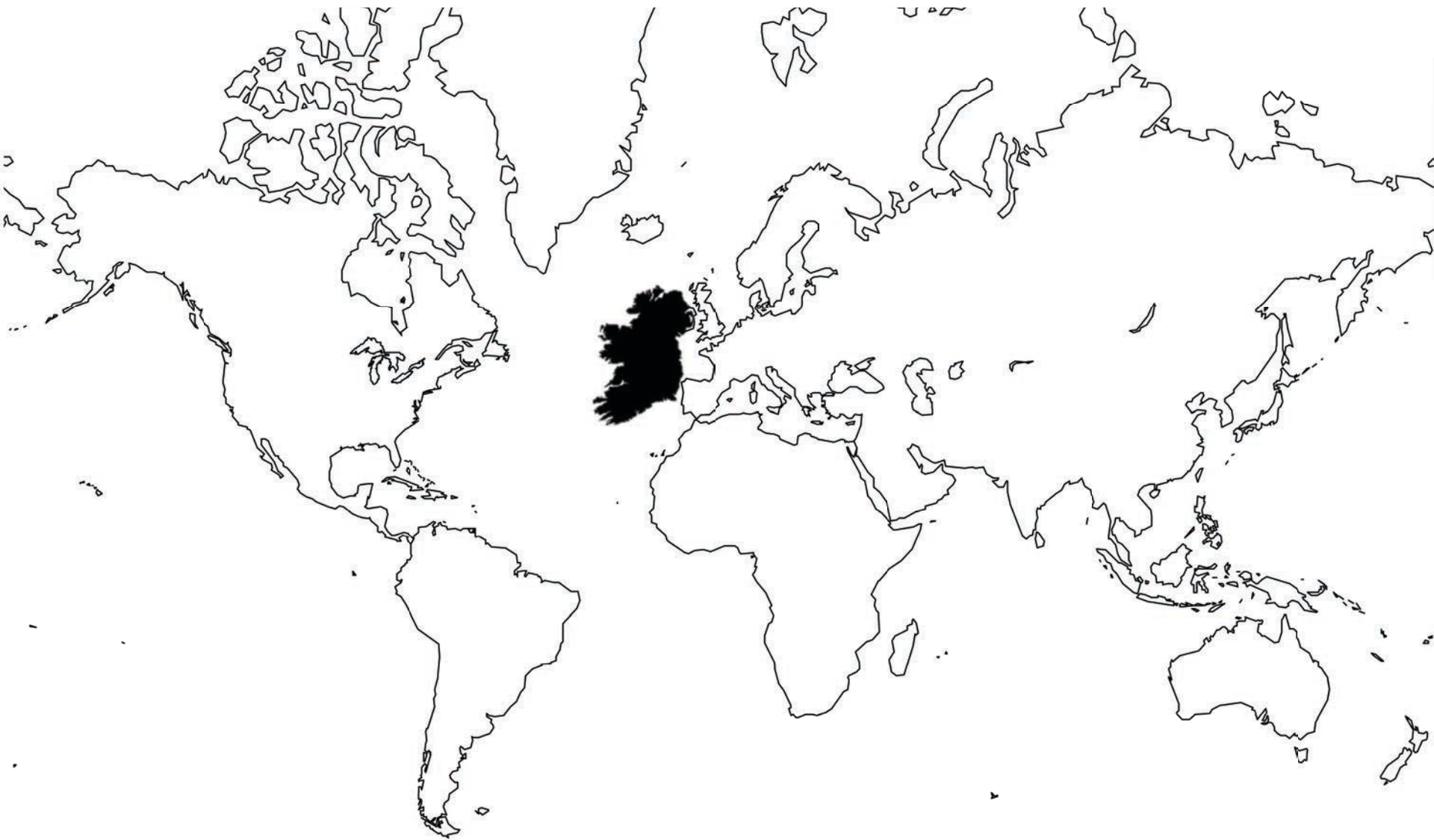


ACES: The Irish Dimension Celebration

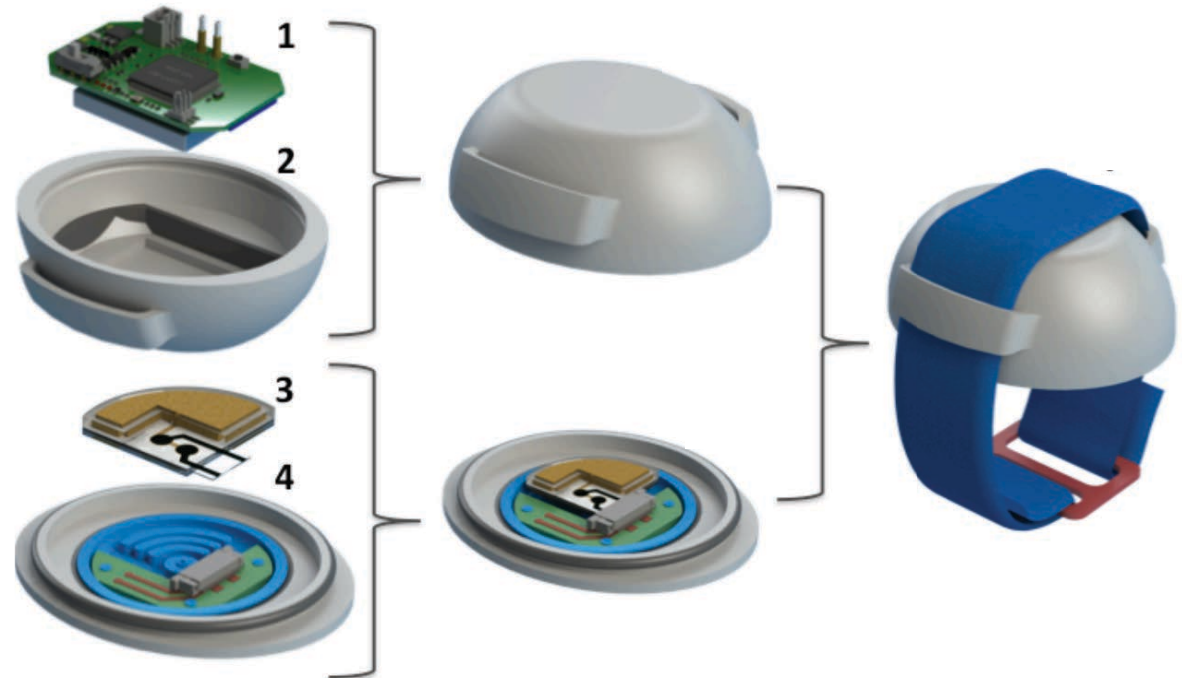




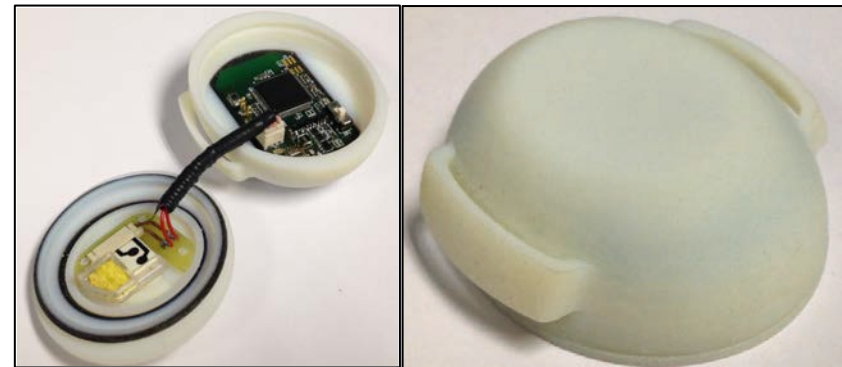


SWEATCH Device

1. Custom-built electronics with wireless communication (Shimmer)
2. 3D printed casing
3. Microfluidic chip + ISE
4. 3D printed sweat harvester and sensor connections



- Rapid prototyping techniques such as laser ablation and 3D printing are utilised to custom build various components including casing and sweat harvesting device (*the Australian National Nanofabrication Facility – Materials node and the Nano-Bioanalytical Research Facility (NRF) in Dublin City University*)





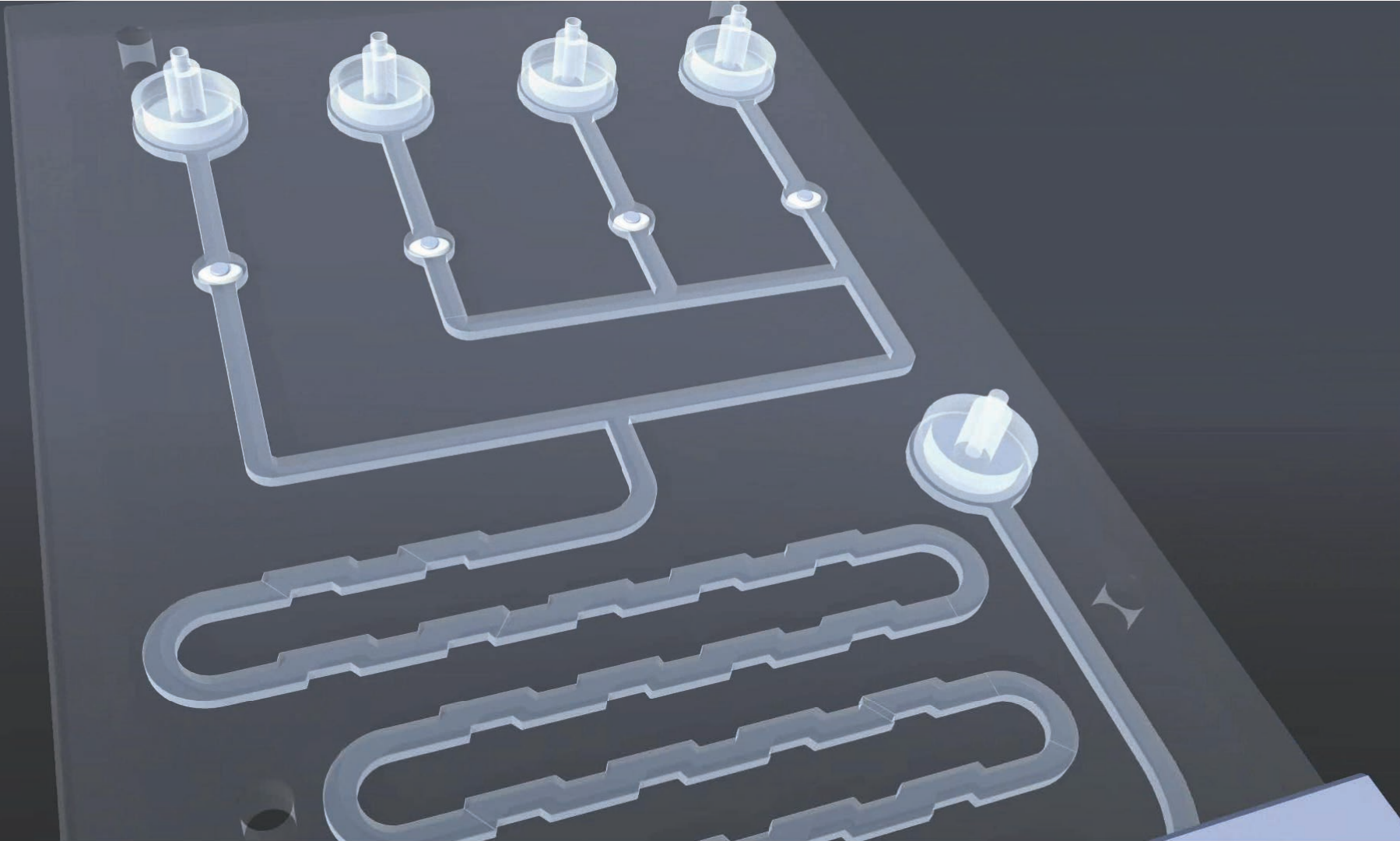
Electrochemical Generation of Cl⁻ gradients on demand...





Activate the Channel Walls...

Switchable Binding and Release





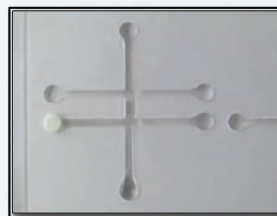
Functional Fluidics Toolbox



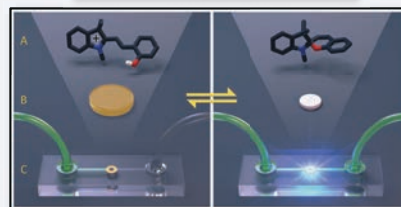
Flexible fluidics



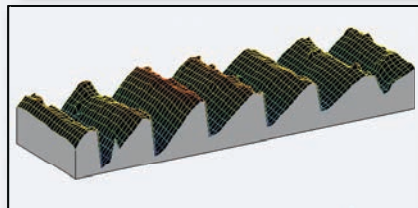
**Smart, functional micro/
nano vehicles**



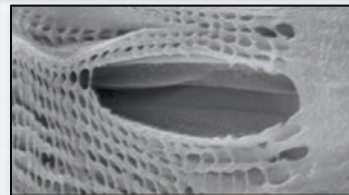
**Biomimetic flow
control components**



**Multi-functional
channel walls**



**Dynamic micro/
nano-pores**



**What's
Next?**





Near Term Applications (5Years)

Data and Information; IOT

Outside: On-Body

Inside: Implants/In-vivo

Smart Bandages

Smart Stents

Self-Aware Transplant

Sensorised Contact Lens

Devices and Platforms

patches/watches

Implants

Post-Operative IC (days)

Sensorised Splints/dentures

Smart Textiles/Clothing

Medium term Convalescence (weeks)

MATERIALS

Physics Chemistry Biology Engineering
(photonics, electronics, fluidics, 4D materials)









Triads.....



‘A triad is one of many branches of Chinese transnational organized crime organizations’





But what about the TRIADS of IRELAND.....

A collection of sayings in Gaelic collected from local people and from Gaelic manuscripts like the ‘Yellow Book of Lecan’ (ca. 1400) and the ‘The Book of Ballymote’ (ca. 1390).

A collection of sayings in Gaelic collected from local people and from Gaelic manuscripts like the ‘Yellow Book of Lecan’ (ca. 1400) and the ‘The Book of Ballymote’ (ca. 1390).





**Trí caindle forosnat cach ndorcha: fír,
aicned, ecna.**

**Three candles to light all darkness:
truth, nature, knowledge**

