

CHALLENGES & OBJECTIVES

Advancement in Biosensors for
E-Health and Fitness Tracking

Key Challenges

- Sensing New Biosignals
- Battery Life Extension

Expected Outcomes

- Using 1D and 2D Materials
- Integration of AI

Advances

- E-Health Services
- Wearable Technology

TECHNOLOGY DEMONSTRATORS



Tattoo sweat sensing



Glycemy Sensor System



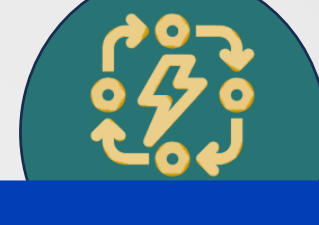
pH Sensor System



ECG, EMG & SpO2



Cortisol & Lactate on Graphene



Energy harvester



Biometric cryptography



Textile-integrated tracker



Edge-cloud AI continuum



In-water activity tracker

PROJECT EVOLUTION

Project Start at TRL 1
Strong consortium
Webpage created

Project End
•TRL 5-6 Short Scale
Demonstration stage

- Commercial production devices and systems.
- Star-ups created.
- AIoT industry implementing H2TRAIN technology.
- Energy harvesting industry implementing H2TRAIN technology.
- Biosensing industry implementing H2TRAIN technology.

2024

2025

2026

2027

2028

2029

2030

...

Novel biosensing device integration
(28 JUNE-4 JULY)

Embedded Intelligence
(5 – 11 JULY)

System of systems
(12 – 18 JULY)

Market implementation

Path for TRL 5-6 established

Maturation and validation of the technology at larger scale.

Key stakeholders engaged.

Business case and business model towards commercialization developed.

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Large Scale Demonstration stage

EXPECTED IMPACT

Publications:

High-impact scientific publications in materials science, AI, IoT, and wearable health tech.

Patents:

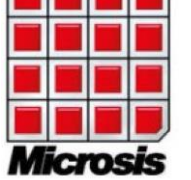
On novel biosensor designs, IDM and 2DM integration, and energy-efficient data processing methods.

Sales:

By meeting the increasing demand for wearable health-monitoring solutions, H2TRAIN's products are expected to drive considerable sales growth in both consumer and medical device markets.

CONSORTIUM









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