MARIE SKLODOWSKA-CURIE ACTIONS
Doctoral Networks (DN)
GA. No 101072980

A game change in biosensing: European MSCA Doctoral Network SYNSENSO to start in September

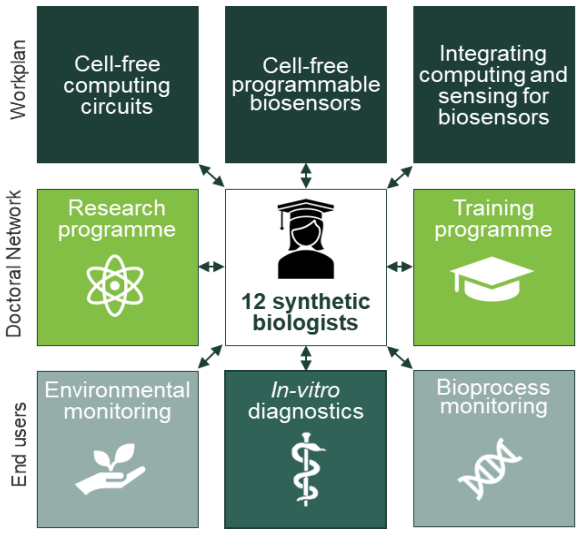
*The new Doctoral Network **SYNSENSO** funded within the framework of the Marie Skłodowska-Curie Actions (MSCA), sets out to develop novel combinatorial biosensors for diagnostics in healthcare, environmental and bioprocess monitoring. The project starting in September 2022 is led by the Technische Universität Darmstadt and brings together 6 academic research institutions and 8 industry partners.*

Blood checks, smear tests, even Covid-19 self-test kits: Biosensors are essential for precision diagnostics in the healthcare sector. By detecting and measuring specific biological markers, for example, glucose, antigens, or bacteria, they enable us to monitor the status of our health and detect diseases, viruses, and deficiencies. Diagnostics through biosensing technologies are non-invasive as well as cost-effective and allow for high-resolution results and portable testing.

Synthetic biology is a key technology of the 21st century and is fuelling a new wave of innovations with a significant impact on economies and societies. Cell-free synthetic biology and its use in biosensor design will be transformative for domains ranging from *in-vitro* diagnostics to health, environmental and bioprocess monitoring. A low-threshold, cost-effective device for the early detection of diseases helps to improve people's health status and to detect or even prevent severe diseases at an early stage. **The outcomes of SYNSENSO will enable transformative innovations in the field of personalised medicine, environmental and bioprocess monitoring.**

12 Doctoral candidates to develop next-generation, combinatorial biosensors

To build this new generation of biosensors that can sense, integrate, and respond to multi-dimensional analyte profiles, **SYNSENSO** will recruit 12 Doctoral Candidates (DCs) to become the interface between cell-free synthetic biology and molecular sensor design. Besides, five academic research groups and two industrial partners join forces in **SYNSENSO** to create a mobility and training platform for young scientists by means of cross-site, interdisciplinary research projects, providing all DCs with unique multidisciplinary scientific training, as well as comprehensive transferable and business training skills to build them into excellent, entrepreneurial, responsible, and collaborative scientists. The Doctoral Candidates will work on individual research projects in order to devise new logic circuits in cell-free systems, build novel responsive elements for analyte detection and integrate logic circuits with response elements to build and test next-generation, combinatorial biosensors.



Overview of SYNSENSO's ecosystem

"Our ambition is to provide a game change in biosensing by combining cell-free synthetic biology with molecular sensor design." – Prof. Dr. Heinz Koeppl, Project Coordinator SYNSENSO

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Facts and Figures

- Funding Program: HORIZON-MSCA-DN-2021
- Budget: 2.62 million euro
- Duration: 01.09.2022 - 31.08.2026
- 6 beneficiaries, 8 associated partners
- 12 Doctoral candidates

Network

Beneficiaries

Technische Universität Darmstadt (TUDa), **DE**

Eindhoven University of Technology (TUE), **NL**

Istituto Italiano di Technologia (IIT), **IT**

Tor Vergata Universita degli Studi di Roma (TVU), **IT**

Dynamic Biosensors GmbH (DBS), **DE**

Ulisse Biomed S.p.A (UBI), **IT**

Associated Partners

Imperial College London (ICL), **UK**

BRAIN Biotech AG (BRA), **DE**

LenioBio GmbH (LEB), **DE**

University of Naples Federico II (UNA), **IT**

Abvance Biotech S.L. (ABV), **ES**

BioMérieux SA (BME), **FR**

Nuclera Nucleics Ltd. (NUC), **UK**

accelopment Schweiz AG (ACC), **CH**

To stay up to date with SYNSENSO, visit our website **www.synsenso.eu**, and follow the project on Twitter **@SYNSENSO_EU** and LinkedIn **@SYNSENSO**

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