

INNOVATION

- Leveraging advanced biotechnology for precise and efficient environmental monitoring.
- Creation of a soil metagenomic database to map pollutant-linked genes across Europe.

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- Join us on our mission to revolutionize environmental monitoring and create a sustainable future!

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MOBILES

MONITORING AND DETECTION OF BIOTIC AND ABIOTIC POLLUTANTS BY ELECTRONIC, PLANTS AND MICROORGANISMS BASED SENSORS

PROJECT OVERVIEW

- **Coordinator:** National Technical University of Athens
- **Duration:** 1.9.2024 – 29.2.2028
- **Budget:** €4.6 million
- **DOI:** <https://doi.org/10.3030/101135402>



INRAE



upna
Università Politecnica delle Marche
National Technical University of Athens

IUNG



université
BORDEAUX

Cyprus
University of
Technology

HF
University of Belgrade
Faculty of Chemistry

mat4nrg

TU Clausthal
Clausthal University of Technology

GRANT GARANT

Research and Innovation Centre
PRO-ARADENIA

The **MOBILES project** is an innovative project funded by the European Union under Horizon Europe Programme. By developing advanced **electronic and organism-based biosensors**, the project aims to detect and monitor harmful organic chemicals, antimicrobial-resistant bacteria, and pathogens across soil, water, and air. Furthermore, soil metagenomic analysis will be conducted on contaminated soils across Europe, and a metagenomic database will be constructed in order to identify a pool of genes linked to soil specific soil pollutants.

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OUR VISION[•]

MOBILES is dedicated to safeguarding environmental health through real-time, portable diagnostic tools, enabling rapid and precise detection of biotic and abiotic pollutants in soil, water and air.



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KEY OBJECTIVES[•]

- **Next-generation electronic biosensors:** Eco-friendly devices to detect organic chemicals, antimicrobial-resistant (AMR) bacteria, and pathogens.
- **Organism-based biosensors:** Usage of genetically engineered plants, bacteria, and marine diatoms to monitor organic and inorganic pollution.



- **Metagenomic analysis:** Comprehensive soil microbiota analysis in polluted areas across Europe to uncover gene clusters and genetic diversity. This helps assess microbial functions and provides genetic markers to quick evaluation of soil and land health.
- **Environmental performance testing:** Validating biosensors using real-world samples from polluted sites.
- **Safety assurance:** Rigorous evaluation of environmental impacts associated with these modified organisms and innovative devices.

