



Newsletter

September 2025

Welcome to the First TwInn4MicroUp Newsletter

Stay Updated on the Latest News!



🌍 **Plastic pollution is a global crisis** – with millions of tonnes leaking into our ecosystems every year, it's clear that traditional recycling just isn't enough! **TwInn4MicroUp** is stepping up with a bold solution: turning plastic monomers–sourced from *green depolymerization*–into **high-value bio-based materials and bioactive compounds** through advanced **Synthetic Microbial Biotechnology**.

🚀 Our mission? To build a strong EU value chain that transforms hard-to-recycle plastics into next-generation, eco-friendly products with real environmental and economic impact. At the heart of the project is a **cutting-edge Research and Innovation Hub**, designed to close the innovation gap across Europe.

🌱 With strategic partnerships, boosted research capacity, and a focus on scientific excellence and entrepreneurship, **TwInn4MicroUp is ready to drive real change**. Let's shape a sustainable future—one molecule at a time!

[Find Out More!](#)



Meet Our TwInn4MicroUp Team!

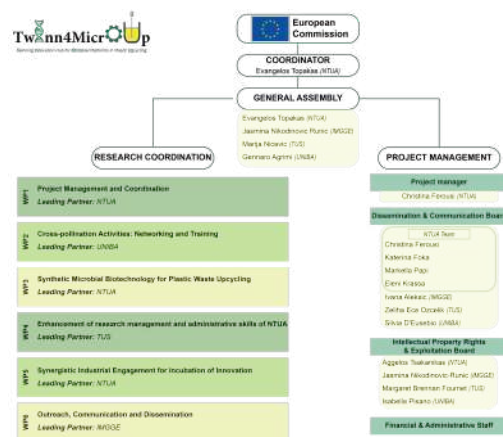


Our Team Leaders play a vital role in driving collaboration and performance across borders.

- Prof. Evangelos Topakas (NTUA), Greece
- Prof. Gennaro Agrimi (UniBa), Italy
- Prof. Margaret Brennan Fournet (TUS), Ireland
- Prof. Jasmina Nikodinovic-Runic (IMMGE), Serbia

[Read More](#)

Within TwInn4MicroUp, we recognize the importance of individuals who can bridge science and society. Our Project Ambassadors take on this role by representing the project, promoting collaboration, and helping us communicate our results to broader audiences. Through their engagement, TwInn4MicroUp becomes more visible, connected, and impactful.





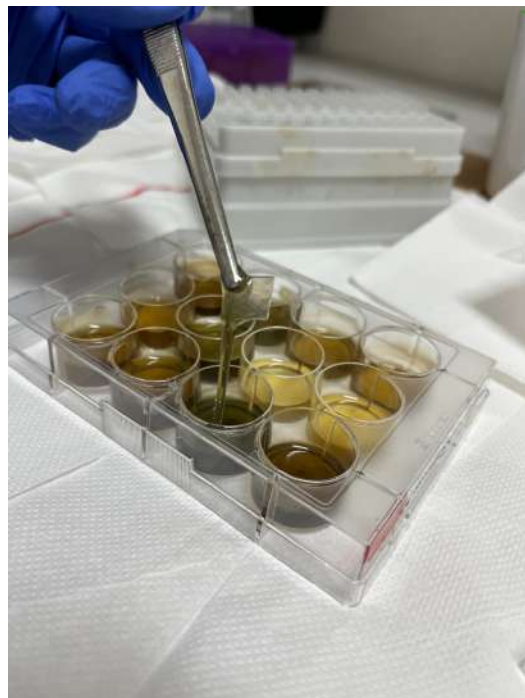
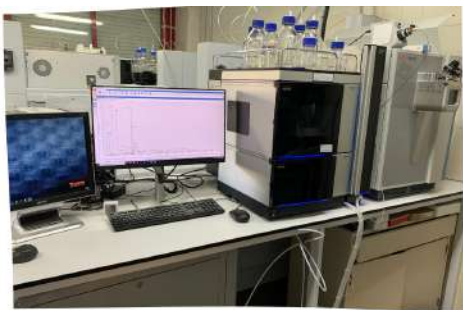
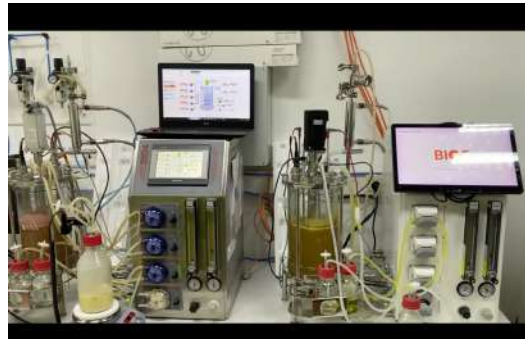
Our Project Ambassadors

- MSc Katerina Foka, NTUA, Greece
- Dott.ssa Silvia D'Eusebio, UniBa, Italy
- MSc Zeliha Ece Ozcelik, TUS, Ireland
- Dr. Ivana Aleksic, IMGGE, Serbia

Communication & Dissemination Activities

Throughout the first year of TwInn4MicroUp, our partners dedicated significant efforts to outreach and education. A key focus was on school visits, where researchers introduced students to the project, its objectives, and the importance of microbiology and biotechnology in addressing today's challenges. By giving interactive lectures and engaging directly with young audiences, we not only promoted the project but also inspired future generations of scientists 🧐.

Research Highlights

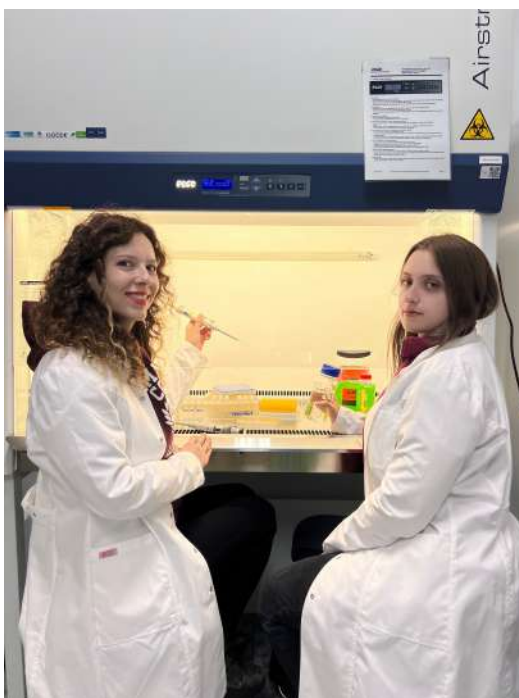


In the first year of TwInn4MicroUp, partners advanced polymer depolymerization and microbial upcycling. NTUA screened diverse microorganisms for growth on plastics and waste oils, adapting and engineering strains to efficiently degrade PCL and produce bioactive compounds. TUS developed a sustainable process to depolymerize PLA waste into valuable chemical feedstocks, while UNIBA created a synthetic biology toolkit for Gram-positive bacteria and achieved the bioconversion of ethylene glycol into glycolic acid. IMGGE contributed

to building microbial cell factories for polymer degradation, reinforcing the project's innovative approach to tackling plastic waste.

Secondments





List of our secondments 2025:

- Plastic pre-treatment techniques training / Processed plastic material characterization training NTUA🇬🇷 → 🇮🇹TUS
- Microbial collection screening for bio-pigment producers / ALE and CRISPR/Cas9 for bacterial strain optimization NTUA🇬🇷 → 🇮🇹IMGGE
- Setup of RMA Office unit supervision TUS🇮🇹&IMGGE 🇮🇹 → NTUA🇬🇷
- Genome/transcriptome and biosynthetic genes analyses UNIBA🇮🇹 → 🇮🇹IMGGE
- Project management and administrative skills improvement NTUA🇬🇷 → 🇮🇹TUS
- Microbial collection screening for bio-pigment producers / ALE and CRISPR/Cas9 for bacterial strain optimization UNIBA 🇮🇹 → 🇮🇹IMGGE



TwInn4MicroUp

Twinning Innovation Hub
for Microbial Platforms
in Plastic Upcycling

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