

TwInn4MicroUp: Twinning Innovation Hub for Microbial Platforms in Plastic Upcycling

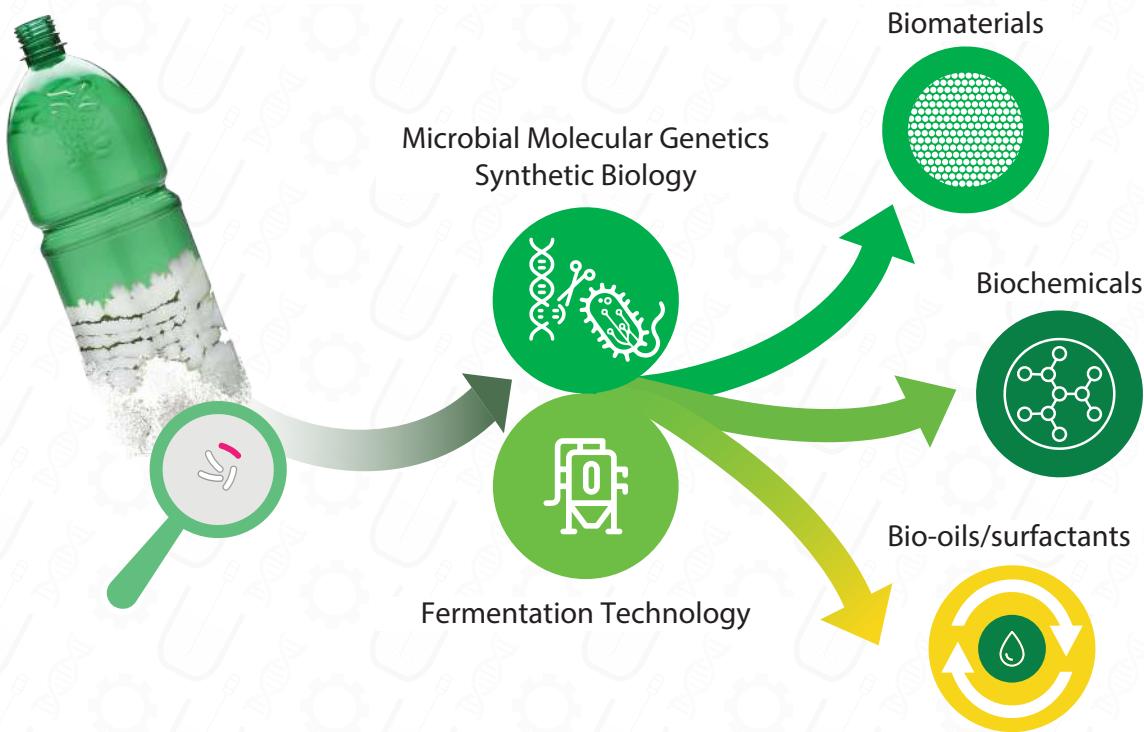
Challenge

Plastics are everywhere: production has skyrocketed from 1.5 million tonnes in 1950 to 359 Mt in 2019, with 8,000 Mt produced by 2020. The result is a massive waste problem—about 20 Mt of plastics leak into rivers, lakes, and oceans every year, creating what's now called the **7th continent of plastic**. Traditional waste management cannot keep up, making new and sustainable solutions more urgent than ever.

Solution

Plastic waste upcycling transforms plastic waste into **valuable, eco-friendly products**. Using innovative biological, mechanical, and chemical methods, we break plastics into their basic parts and feed them to engineered microbes. These **microbial factories** can then produce natural colorants, health-promoting compounds, green cleaning agents, and advanced bio-based materials.

Upcycling Plastic Waste into Valuable Bioproducts with the Power of Microbes

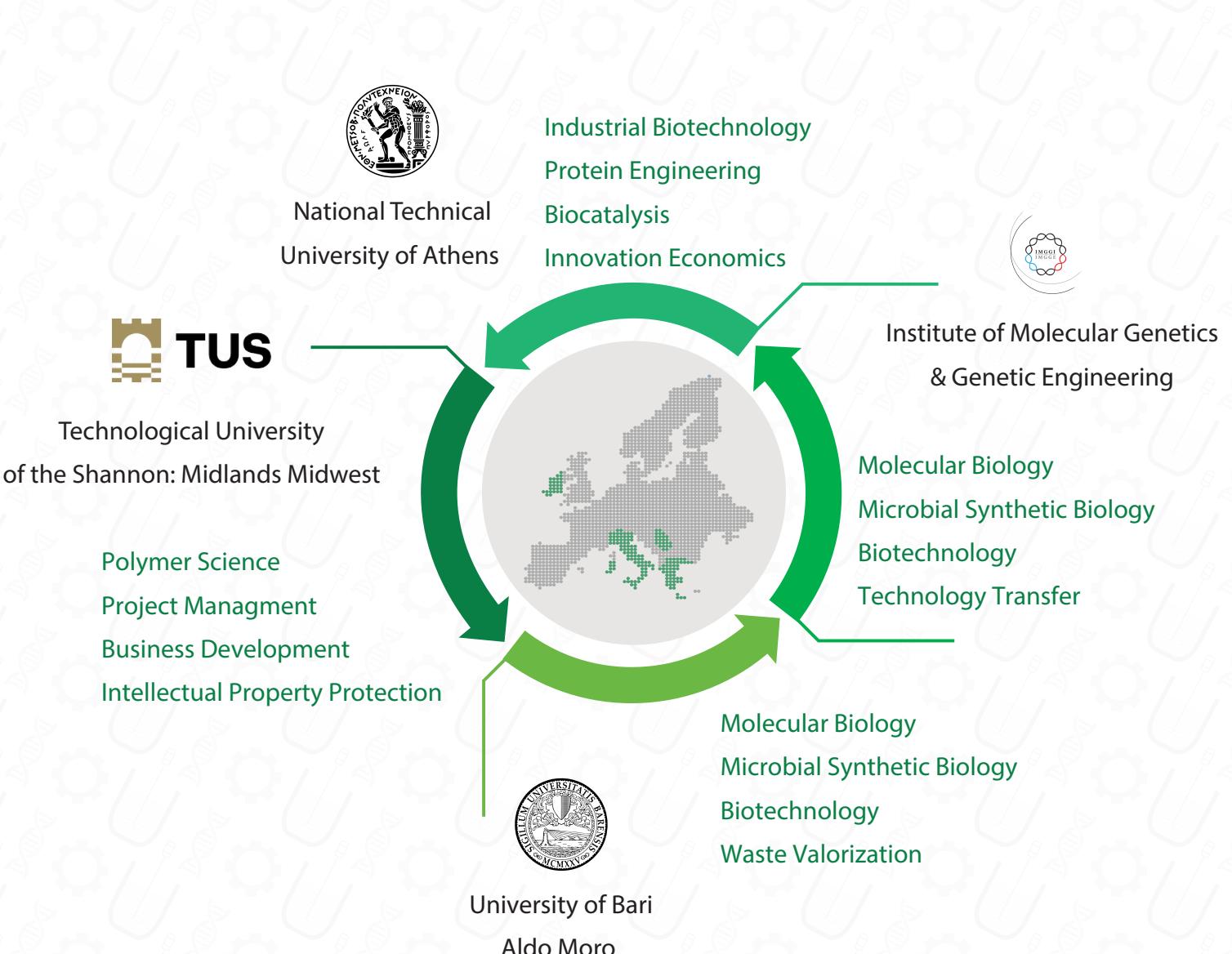


Objectives

-  Lead in Synthetic Microbial Biotechnology
-  Strengthen Scientific Expertise
-  Build Strategic Partnerships
-  Promote Innovation & Entrepreneurship

Vision

Our overarching goal is to establish the **MicroUp Hub**, a **research and innovation center** that will create partnerships, share knowledge, and drive entrepreneurship. Our goal is to combine **environmental protection** with **scientific progress, economic opportunities, and public awareness**—paving the way toward a cleaner, more sustainable future.



TwInn4MicroUp



Funded by the European Union

This project is funded from the European Union's Horizon Europe call **HORIZON-WIDERA-2023-ACCESS-02** under Grant Agreement **No 101159570**. Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.



twinn4microup.eu



TwInn4MicroUp Project



twinn4microup



Prof. Aggelos Tsakanikas
 TwInn4MicroUp Tech Transfer Lead
atsaka@chemeng.ntua.gr

Prof. Evangelos Topakas
 TwInn4MicroUp Project Coordinator
vtopakas@chemeng.ntua.gr

Dr. Christina Ferousi
 TwInn4MicroUp Project Manager
twinn4microup@gmail.com