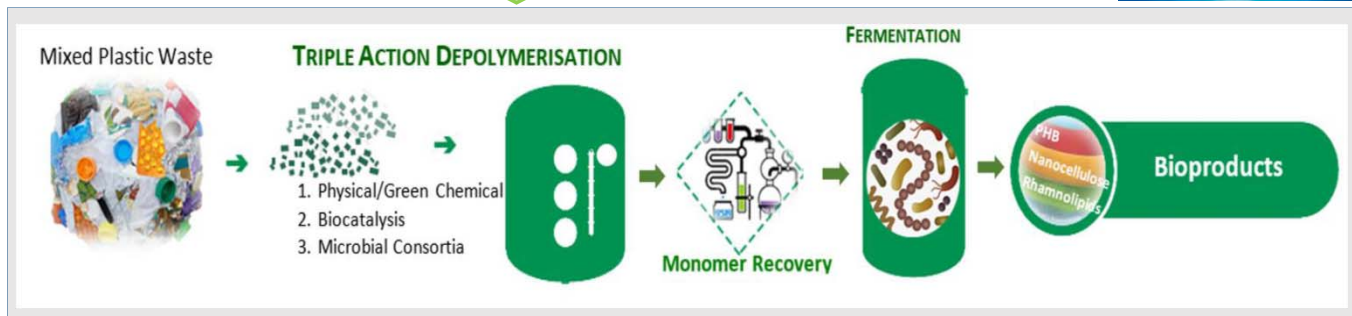


Bio Innovation of a Circular Economy for Plastics



Projektleiter:
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Förderzeitraum:
01/2020 – 12/2023

Förderstelle:
EU Commission Horizon 2020
NMPB-TR-IND-2018-2020

Topic: CE-BIOTEC-05-2019
Microorganism communities for
plastics bio-degradation

Förderkennzeichen:
Proposal number: 870292
Proposal acronym: BioICEP

Expected Impacts mentioned in the work-programme

IMPACT 1 - A combination of microorganisms expressing at least three novel or improved enzymatic activities enabling the degradation of mixtures of plastics

BioICEP will develop at least **FOUR improved enzymatic activities** enabling the degradation of plastics mixtures (such as PETase, PHA-depolymerase, Cutinase, Triple active biocatalyst).

IMPACT 2 - Degradation of at least 20 percent of non-biodegradable plastics found in plastic mixtures

The minimum expected degradation of mixed waste plastics on completion of the project is **20.5 ±0.5 %** in the case of recalcitrant plastic components and will be measured by **% weight loss post depolymerisation**

IMPACT 3 - At least two high-added-value products sustainably produced from plastic mixtures

BioICEP will identify at least **FOUR high performance, high added value, high growth potential products** that will be sustainably produced from waste plastic mixtures (such as Bioplastics for Flexible food packaging, Bioplastics for Rigid food packaging, 3D printable Bioplastic Filaments and Biosurfactants).

IMPACT 4 - Description of a sustainable and environmentally friendly pilot system for the degradation of plastic mixtures

BioICEP will deliver **ONE sustainable and environmentally friendly 100L pilot plant** for the integrated degradation of waste plastic mixtures and production of bioproducts.

TUC contribution



Development of a novel combination of mechano-biochemical processes for the reduction of mixed plastic polymer MW by 25-50 % Means of verification: Methods such as ultrasonication will be combined along with UV-assisted photo degradation, microwave thermal degradation.

