## **On-Going-Projects**





## EcoPlastiC

EcoPlastiC is a TUS led project awarded by the European Commission's Horizon European Innovation Council Pathfinder and commences in 2022. This project is dedicated to the full decoupling of plastic consumption from the current fossil fuel extraction and instead entry into permanent regenerative loops. The challenges are (a) the high yield production of suitable fermentable feedstocks from heterogenous and contaminated PET waste plastic; (b) low carbon conversion to biopolymers with performance properties equivalent to petroleum counterpart plastics.

## In TUS, our tasks involved:

**a.** Developing and tailoring the mixed waste PET plastics (e.g. low-grade PET, mixed recalcitrant PET, metalized PET), but not limited to polyesters depolymerisation technology using mechanogreen chemical processes for efficient production of constituent monomers. These depolymerized monomers serve as the building blocks which allow re-polymerisation into high value polymers, exhibiting properties equivalent to those of virgin petroleum plastics.

**b.** We provide pre-treated waste polymers for biocatalytic depolymerization to our partners such as AVECOM (Belgium), NOVA (Portugal), and IMGGE (Serbia), This could be led to the creation of novel biopolymers.

**c.** The production of eco-plastics for food packaging applications by utilizing single-cell protein and PHA/PHB rich biomass supplied by AVECOM. We are closely collaborating with our partner, KTH (Sweden) to formulate and process these new eco-plastics, contributing to a more sustainable and circular approach to plastic usage.

