



CE-SPIRE-10-2018

MMAtwo

Full Title: Second generation Methyl MethAcrylate

Aim:

PolyMethylMethAcrylate (PMMA) is a well-established polymer for its optical properties. Although PMMA can be turned back into its monomer, the technology has limited applications. Currently what is collected and reprocessed are mostly production scraps, which is about 10 % of the annual PMMA production but a much larger amount of recyclable product is available. On a world scale basis, 10 % of post-industrial scraps and the equivalent of 10 % of post-consumer products represent a potential of a Billion € market. The MMAtwo project main objective is to construct a novel and fast growing PMMA recycling value chain through depolymerization and recovery of a monomer grade sold at 90 % of virgin MMA price. MMAtwo targets to reduce the energy needs by more than 70 % and the CO₂ emissions by more than 60 %. To achieve its objective, MMAtwo integrates representative players along the value chain. During the project, PMMA will be collected from production scraps, but also from End-of-Life vehicles, Electronics goods, construction

Concept:

The lead-free depolymerization process will be validated at TRL7 enabling the possibility of a first commercial unit soon after the end of the project. A versatile purification process will be validated through repolymerization of the produced monomer. MMA grades produced will be validated in several optical and non-optical applications. The inorganic fractions from PMMA composites will also be valorized. The project will establish standards for post-consumer and post-production PMMA based products in order to facilitate the recycling. Training and education activities will be organized in order to prepare the next generation of Engineers and Researchers in

the field of closed-loop polymer recycling. The new value chain will benefit to the entire PMMA industry, as post-production and post-consumer products will be collected and processed by an independent company servicing the major PMMA producers and their customers.

Start date:

01/10/2018

End date:

30/09/2022