PerPETual

In PerPETual, the waste PET-plastic is depolymerized into monomers by breaking the polymer chains and can be re-polymerized following purification. This “new” virgin PET can be regenerated perpetually and used in the same or similar applications as the equivalent fossil fuel-produced virgin polymer. The main challenge of the project is to produce pure monomers, fit with industrial specifications, from the waste plastic, which can often contain many unknown contaminants. The project team has successfully developed strategies to produce pure monomers from the waste plastic feedstocks. In addition, the technology has been tested on industrial-scale production lines, resulting in successful outputs. All steps of the created technology have been designed considering its industrial applicability and compatibility with the industrial requirements. The PerPETual technology suite is designed to deal with all grades of PET, spanning pristine bottle grade to food and industrial additive-contaminated low-grade PET pots, tubs, and trays. The concept consists of washing & pelletizing post-consumer PET, then depolymerizing to PTA via PerPETual®, a proprietary green extrusion, and repolymerized as virgin PET resin, ready again for products such as food packaging or textiles.