Peter Schwarz, Covestro Deutschland, DE: Advanced Recycling of Engineering Thermoplastics – A Differentiated View on Recyclability

When it comes to the question of recyclability, engineering thermoplastics face specific problems. They are only used when their properties are required, they make only small portions in waste streams, the collection is difficult. The generic chemical recycling processes – gasification or pyrolysis – struggle with the heteroatom content in most engineering plastics. Mechanical recycling often is no option as it always is downcycling.

Due to their chemical structure, engineering thermoplastics offer an interesting potential for polymer-specific advanced recycling procedures (e.g. depolymerization, which is more or less impossible for polyolefins). By these, smaller “circles” are possible back to the new polymer, using less energy resulting in better carbon footprints and LCA values.

Using Polycarbonate as an example, the presentation will thematize the different generic and specific advanced recycling routes and the particular problems of engineering thermoplastics in advanced recycling.