Chemical recycling of plastics mixed with additives via pyrolysis

The project aims to identify recycling options for plastics containing additives through pyrolysis.

This project is a cooperation between the Institute for Technical Chemistry (ITC) at the Karlsruhe Institute of Technology (KIT) and the LANXESS Deutschland GmbH.

Within the scope of the project, the degradation behavior of a number of functionalized plastics to which bromine- and phosphorus-based flame retardants have been added will be experimentally investigated at ITC. This will allow studying the simultaneous recovery of organic feedstock and halogens, as well as demonstrate the technical feasibility based on experimental validation. Likewise, the influence of organophosphorus compounds on the results and the basic phosphorus recoverability will be studied. This should eventually provide the design basis for the thermochemical conversion process and allow for process optimization for transfer to an industrial scale.