

Master thesis in Chemistry and Chemical Technology

Solvent based recycling of commodity polymers

You will work in the field of solvent-based chemical-recycling of polymers.

The goal will be to improve on established techniques and investigate new avenues for chemical recycling of commodity polymers. Challenges in the recycling process need to be addressed to increase cleaning efficiency and sustainability, not only in laboratory experiments but more so featuring a scale relevant for future applications to enable a circular economy.

Tasks

- Investigate the solvent-based recycling in laboratory scale and scale-up scenarios using statistical experimental planning
 - Explore alternative solvents to established processes with special attention to green solvents and/or solvent mixtures
 - Determine the impact of polymer type on the quality of solvent-based recycling processes
 - Study how to effectively remove discoloration from polymers in solvent-based recycling
 - Experiment on practical filler and polymer separation
 - Optimize solvent-based recycling

Expertise

- Knowledge in characterization of polymers
- Experience in process engineering
- Skilled in Data Processing and Experimental Design
- Independence, intrinsic motivation and structured workflow
- Detail oriented and goal-oriented problem-solving skills
- Effective communicator proficient in English and German

Offer

- Engage in impactful research on sustainable technologies for a circular economy.
- Collaborate with industry leaders to gain hands-on, real-world experience.
- Receive a competitive salary for your contribution to the project and master thesis
- Shape a sustainable future by proactively working on solvent-based recycling.