

Master Thesis in Chemistry and Chemical Technology

Chemical Recycling of Silicones

This master thesis focuses on the chemical recycling of silicon-based polymers, aiming to develop fundamental knowledge about depolymerization routes for industrial waste. The goal is to recover reusable building blocks that can serve as feedstock for new materials. Through a combination of experimental studies, analytical techniques, and computational modeling, this project seeks to identify and optimize process conditions for silicone depolymerization, contributing to a circular economy.

Tasks:

- Conduct a comprehensive literature review on chemical recycling methods for Si-based polymers.
- Explore computational modeling techniques to predict and optimize depolymerization processes.
- Design and carry out experiments to determine process conditions for the depolymerization of silicones.
- Analyze data to establish correlations between depolymerization parameters and product properties.
- Collaborate with experts to investigate the chemical and physical mechanisms underlying silicone recycling.

Expertise:

- Experience with chemical analytical methods and chemical engineering.
- Proficiency in data analysis and computational modeling techniques.
- Strong problem-solving skills and the ability to work independently.
- Excellent communication skills in English and German, both written and verbal.

Offer:

- Conduct research in collaboration with academic and industrial leaders.
- Develop expertise in a high-impact area of chemical recycling and sustainability.
- Contribute to industrial projects aligned with circular economy principles.
- Earn a competitive salary and the chance to apply research in an industry-relevant context.