

Master Thesis

Miniplants | Homogeneous catalysis | Operando spectroscopy | Reaction engineering

Our group:

The Multiphase Catalysis Group in the department of Molecular Catalysis at the Max Planck Institute for Chemical Energy Conversion (MPI CEC) is currently looking for students interested in conducting research in the field of catalysis and reaction engineering.

Our research is focused on green chemistry, catalysis and process intensification. We work at the interface between chemistry and engineering and therefore offer a very versatile work environment. Projects include the development of new reactions, design of suitable catalysts, catalyst recycling in multiphase systems and scale-up of processes into batch and continuously operated miniplants.

Your thesis:

This project aims to investigate the catalyst deactivation in homogeneously catalyzed reactions. For this purpose, we have developed a unique miniplant setup utilizing operando spectroscopy. With the help of this setup we can investigate the catalyst system and track the catalyst deactivation.

As part of your thesis, you will perform batch / semi batch experiments on the miniplant to investigate the catalyst system for the desired reaction. You will also build up a continuous miniplant to perform long term experiments.

What is waiting for you:

- A green and sustainable project in the field of chemical engineering on the interface between research and industry
- Working in state-of-the-art technikum and laboratory
- A fun and friendly international work environment at an excellent research institution
- HiWi contract and salary for 6 months

Requirements:

- Enrolled in a Master's degree programme in Chemical Engineering or similar
- Interest and motivation to work in the field of homogeneous catalysis and green chemistry
- Interest and motivation in working with miniplants
- A level of English that is sufficient for communication with your international colleagues, understanding scientific literature, and writing the master thesis.

If this description sounds like you and you are interested, do not hesitate to contact me with a short description of your background and interests and why you want to join the team!



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