



DLR – DAAD Fellowships

Fellowship No. 540

Research Area : Energy

Research Topic: **Electrochemical CO2 Reduction**

DLR Institute: Engineering Thermodynamics, DLR Stuttgart

Position: Doctoral Fellow

Openings: 1

Job Specification: **Catalyst and electrode development for electrochemical CO2 Reduction**

In the Electrochemical Energy Technology department, DLR and around 80 employees are researching a wide variety of technologies for future energy scenarios (e.g. fuel cells, high-temperature electrolysis, batteries, etc.). The direct use of electrical energy based on wind or solar energy for the reduction of CO₂ to higher-value products such as ethylene or ethanol represents a promising method to enable independence from fossil fuels in the future and to curb climate change. In the course of this work, fundamental correlations between catalyst/electrode properties and their electrochemical performance with regard to CO₂ reduction are to be explored. Parameters such as activity, selectivity and stability play a crucial role here. Various techniques are used at DLR or by project partners to produce and test so-called membrane-electrode assemblies. The physical and electrochemical characterization is carried out in the Electrochemical Energy Technology department at DLR. To investigate under conditions that are as realistic as possible, tests can also be carried out on a test stand for single-cell experiments.

Your work:

- Production of membrane electrode assemblies
- Synthesis of nanoparticulate catalyst concepts
- Electrochemical and physical characterization
- Operation of the single cell test stand with downstream analytics
- Documentation, evaluation and publication of the results

Your qualification:

- Studies in process engineering, chemical engineering, chemistry, physics, energy technology, mechanical engineering or similar
- Knowledge in the field of electrochemistry
- Independent and structured way of working
- High motivation and ability to work in a team
- Good knowledge of written and spoken English

Required Qualification: MSc. Chemistry or Chemical Engineering

Advantageous Skills: Electrochemistry

English competence: See requirements on www.daad.de/dlr

Earliest Start Date: 06/2022

Application Deadline: Until position filled

Further Information: <http://www.dlr.de>
<http://www.daad.de/dlr>