



PhD position in experimental spectroelectrochemistry for negative emission technologies

In the Emmy-Noether Group "SPECSY" at the Institute for Physical and Theoretical Chemistry we are offering a

PhD position in experimental spectroelectrochemistry (f/m/d; E 13 TV-L, 50-67 %)

with the planned start date of December 1st 2021 and a funding period of three years.

Project description

With anthropogenic greenhouse gas emissions not dropping quickly enough, the removal and permanent storage of CO₂ from the atmosphere is likely to become an important pillar of climate change mitigation. In the NETPEC project (www.netpec.org), we aim to establish the basis for photoelectrochemical negative emission technologies, achieving CO₂ conversion and storage at much higher efficiencies than what natural photosynthesis offers. This would translate to smaller land footprints and render the approach more sustainable. A highly interdisciplinary team from six universities and research institutes will look at the whole process chain, from climate modelling to geological storage. The sub-project at Universität Tübingen in the SPECSY group will investigate catalysts and their coupling to photoelectrochemical solar cells by computational as well as experimental approaches.

Your responsibilities are

- to work in an interdisciplinary research team on photoelectrochemical CO₂ reduction in the project „NETPEC“
- to conduct experiments on catalyst-electrolyte and catalyst-semiconductor interfaces by photoelectrochemical and spectroelectrochemical methods, notably operando reflection anisotropy spectroscopy
- to evaluate experimental results in context with computational data (scripting skills, such as Python, beneficial)
- to publish, discuss, and present the results of your research

We expect

- a university degree (M.Sc. or equivalent) in physics, chemistry, materials or environmental science, or related fields
- an interest in the investigation of solid-liquid interfaces by spectroelectrochemistry
- experience in optical spectroscopy or surface science methods
- willingness and ability to work in an international and interdisciplinary team

The university seeks to raise the number of women in research and teaching and therefore highly encourages qualified women academics to apply for these positions. Equally qualified applicants with disabilities will be given preference.

Your application should contain a letter of motivation, a CV, certificates and transcript of records (all in a single pdf), and the pdf or link to a written document such as your M.Sc. thesis. Please submit your documents to netpec-positions@netpec.org with the subject „Netpec-PhD“. For further questions, contact Dr. Matthias May at matthias.may@uni-ulm.de. Review of applications will start Oct. 01 2021 and ends when the position is filled.