Institut für Angewandte Materialien
Elektrochemische Technologien
Adenauerring 20 b
76131 Karlsruhe

Student Research Assistant

Work on Green Energy Technologies: PEM Electrolysis

Research area

- ☐ Batteries
- ☒ Fuel cells and electrolysis
- ☐ Electrocatalysis

Alignment

- ☒ Experimental
- ☒ Electrical Characterization
- ☐ Material analysis
- ☒ Development of measurement technology
- ☐ Modeling
- ☐ Simulation
- ☐ Literature Research

Course of study

- ☒ Electrical engineering and IT
- ☒ Mechanical Engineering
- ☒ Chemical Engineering
- ☐ Physics
- ☐ Techno mathematics
- ☐ Industrial Engineering

Language

- ☒ English
- ☒ German

Starting date

As soon as possible / by arrangement

Contact person

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Motivation

Hydrogen plays a central role in the energy transition. In that regard, water electrolysis is a favorable hydrogen production method and polymer electrolyte membrane water electrolysis (PEMWE) is of particular interest due to its high-power density, high-pressure operation possibility and partial load capability.

For the investigations on the performance of PEMWE cells, electrochemical characterization of the incremental single cells under system-relevant operating conditions will be conducted in the labs of IAM-ET. Different loss processes in the cell are to be identified and quantified by adopting dynamic electrochemical measurement methods.

Tasks

- Preparation and implementation of electrochemical measurements
- Installation and exchange of test cells
- Improvement of existing test scripts and writing of new scripts
- Improvements and repairs to the test bench

Application

We offer excellent support and the opportunity to work in an interdisciplinary team on an innovative topic. Independent work and the motivation to familiarize yourself with new topics are required. If you are interested, please send your CV and grades to debora.brinker@kit.edu and goezde.kardes@kit.edu