



## Studentische Hilfskraft (HiWi)

### Simulation HiWi for the standardization of models in battery research

#### Field of Science

- Batteries
- Fuel Cells and Electrolyser
- Electrocatalysis

#### Focus

- Experimental
- Thermodynamic analysis
- Reaction chemistry
- Structuring Code
- Simulation
- Literature research

#### Studies

- Chemistry
- Chemical engineering
- Electrical engineering
- Mechanical engineering
- Computer Science
- Material science

#### Starting date

Immediately

#### Contact person

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<https://www.iam.kit.edu/et/english/index.php>

#### Motivation

At IAM-ET, we are actively shaping the future of energy storage. In particular, we use and develop methods for the model-based analysis and optimization of the physical and chemical processes on electrode surfaces, we have developed kinetic Monte Carlo (KMC) models that are capable of analysing the formation of boundary layers between different anodes and liquid electrolytes, which are commonly referred to as the Solid Electrolyte Interface (SEI).

For the standardization and maintainence of our model we are looking for a HiWi who can work atleast 30 hours/month. We are looking for both Bachelors and Master's students with sound programming skills, preferably in MATLAB. Knowledge of modeling electrochemical systems would be an advantage. If possible, the employment relationship should be designed for long-term collaboration.

#### Areas of responsibility:

- Modularization of existing model and its extensions in MATLAB.
- Updating the model extension in GITLAB library.
- Increasing efficiency of code
- Management of the GITLAB library
- Literature research on latest KMC methods for battery research

#### About us:

We offer excellent supervision and the opportunity to work in an interdisciplinary team on a cutting-edge topic. The IAM-ET offers a constantly growing team with expertise in battery, fuel cell and electrocatalysis research focused on simulation at Campus East KIT and on experiments at Campus Sud KIT. There are regular opportunities to work on our research projects as part of your final thesis.

For more information about the position, please contact **Aravind Unni**. If you are interested, please send us your **CV, transcript of records and a current certificate of enrollment**.