**Research Area:** Energy

**Research Topic:** Development of porous transport layers for alkaline electrolyser using numerical and empirical methods

**DLR Institute:** Institute of Engineering Thermodynamics, DLR Stuttgart

**Position:** Doctoral Fellow

**Openings:** 1

**Job Specification:** There is an opening for a doctoral fellow with the Department of Electrochemical Energy Technology to work on the development of porous transport layers (PTL) to optimize the diffusion of species (water and gases) in alkaline electrolyzers. The research will be conducted using microstructural and fluid dynamic modelling and combining those with empirical tools such as material characterization and electrochemical testing. Alkaline water electrolyser (AWE) is one of the most mature and attractive technologies but has challenges of low achievable current densities and part load capabilities. The department has recently shown significant improvement towards attaining higher current densities of AWE by a suitable combination of catalyst layer and PTL. Our aim is to develop these components further and validate them in a stack. The candidate will conduct research on the design of PTLs using models and manufacture those by plasma spraying. The developed PTL will be then characterized and tested electrochemically.

**Required Qualification:** MSc degree in materials engineering, mechanical engineering, process engineering, chemical engineering, energy engineering or related field from an accredited university. Experience in conducting research with diffusion modelling and simulation during MSc is a must.
Advantageous Skills: Candidate should be self-driven who can engage in conducting the experimental work with supervision and support the team members to move ahead with their research. Following skills are a plus:
- Knowledge of electrochemistry, electrochemical devices and testing
- Knowledge of structural modelling
- Fluent in English – verbal and written

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

Earliest Start Date: February 1st 2020. The position is for 36 months with possibility of extension for 12 further months.

Application Deadline: Until the position is filled.

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