



DLR – DAAD Fellowships

Fellowship No. 438

Research Area : Energy

Research Topic: **Solar Research – Solar Fuels Production**

“Evaluation of process configurations and options for solar CO₂ on-site conversion”

DLR Institute: Institute of Solar Research, DLR Cologne

Position: Postdoctoral Fellow

Openings: 1

Job Specification:

DLR, Solar Research is active in developing processes to store energy from concentrated solar radiation in the form of so-called Solar Fuels or Solar chemical commodities. Typical raw materials are carbon dioxide, water, natural gas or waste materials. To identify the best way to produce solar fuels, it is important to assess the different possible technologies. The tasks of this postdoctoral position aim at analyse and evaluate different technology options for CO₂ on site conversion using the concentrated solar technology, in particularly the evaluation of different process configurations and options for material flow and heat integration between DAC, electrochemical or solar thermochemical hydrogen or syngas generation, and syngas conversion into liquid fuels, e.g., via modular intensified Fischer-Tropsch technologies based on process simulation and experimental data. This will cover potential applications of different size and for installation in different environments in Germany as well as in sun-rich and wind-rich countries. The related project comprises the following tasks:

- Identification of preferred technology options
- Development of technological elements of future value chains and their integration into process chains for the provision and conversion of CO₂
- Proof-of-concept plant
- Assessment of potential technologies including techno-economic analysis

Required Qualification: Degree in Chemical engineering, Chemistry or Physical Chemistry
PhD or doctoral degree
Experience in Solar Technologies, in particular in Solar Chemistry
Experience in system evaluation

Advantageous Skills: Experience in ASPEN
Experience in techno-economic study

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

Earliest Start Date: 1 May 2020

Application Deadline: Open

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