



**Deutsches Zentrum
für Luft- und Raumfahrt**
German Aerospace Center

Linder Höhe
D-51147 Köln
Telephone: +49 (0)2203 601-0
Internet: <http://www.dlr.de>



Deutscher Akademischer Austauschdienst
German Academic Exchange Service

Kennedyallee 50 – D-53175 Bonn
Telephone: +49 (0)228 882-0
Telefax: +49 (0)228 882 448
E-mail: dlr-daad-program@daad.de
Internet: <http://www.daad.de/dlr>

DLR – DAAD Fellowships

Fellowship No. 367

Research Area : Energy

Research Topic: Feedstock evaluation for aviation biofuels production

DLR Institute: Institute of Engineering Thermodynamics (TT), Stuttgart

Position: Postdoctoral Fellow

Openings: 1

Job Specification: Future aviation will require great amounts of renewable fuels to ensure long-term growth while restricting its climate impact due to kerosene combustion. If the fuel was produced from biomass, that had absorbed the same amount of carbon dioxide from air, which will be emitted in the turbine, a calculational carbon neutral flight is possible. Biomass processing towards renewable aviation fuels includes an assembly of multistage processes with different options for enhanced efficiency, carbon usage, by-product handling etc. Renewable biomass itself is a feedstock with varying chemical composition, heating value and processing characteristics. For different types of biomass the effect of biomass characteristics on the choice of processing pathway, energetic and exergetic efficiency and production costs has to be identified and quantified. This will help the adjustment of biomass processing in current European research projects, where the technical, economic and ecological evaluation for renewable fuels production processes has to be performed. The main task of this postdoctoral position is to develop a practical scheme for linking characteristic biomass parameters to the optimal choice of processing conditions with maximum efficiency and added value. It is essential that the candidate has previous experience in biomass characterisation and knowledge about biomass processing. The candidate must be in the position of identifying beneficial biofuels production pathways, its limitations, challenges and opportunities for improvements. Techno economic assessment methods need to be applied and gradually improved towards biomass processing pathways.

Required Qualification: PhD in Chemistry, Process Engineering, Physics or related disciplines with background in biomass characterization as well as in biomass processing like gasification, liquefaction or torrefication.

Advantageous Skills:

- Knowledge and experience in chemical process simulation as well as the interpretation of the simulation results
- Technical, economic and ecological process evaluation and the capability to find improvements in biofuels production processes
- Experience in working at European Research projects of the Horizon 2020 program is a plus

English competence: fluent (see requirements on www.daad.de/dlr)

Earliest Start Date: starting from 1. December 2018 initially for 12 months with a possible extension of further one year

Application Deadline: until position is filled

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