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DLR – DAAD Fellowships

Fellowship No. 367

Research Area : Energy

Research Topic: 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.

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.

In the research group alternative fuels of the institute of engineering thermodynamics, currently 7 staff members focuses its activity on the understanding of different alternative fuels production processes, evaluating its technical and economic potential as well as determining the ecological impact of large-scale alternative fuels in future energy scenarios. As an innovative process engineer or chemist you 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. The candidate must be in the position of identifying beneficial biofuels production pathways, its limitations, challenges and opportunities for improvements. This includes efficient reporting and communication to colleagues and project partners. Techno economic

assessment methods need to be applied and gradually improved towards biomass processing pathways. In addition to the project work, you are welcome to support and contribute by bringing your expertise in biomass processing and fuels production to the R&D activities within the group, aiming at the development of new production routes and assist students, Ph.D. students in their thesis work with process simulation, cost estimation, life cycle assessment and project data interpretation.

1. Biomass processing, fuel production, process simulation, cost estimation project work including efficient reporting and documentation.
2. Writing scientific publication.
3. Develop the cost estimation tool in our group, supervise and ensure the good working project engineers. It is expected you to take over the supervision of European research projects, and ensure scientific excellence in the field.
4. Acquire and supervise students.
5. Contribute to project acquisition.

Required Qualification: PhD in Chemistry, Process Engineering, Physics or related disciplines with background in biomass processing like gasification, liquefaction or torrefication as well as fuels production like Methanol, Ethanol, Butanol, Fischer-Tropsch, etc.

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 immediately initially for 12 months with a possible extension of one additional year

Application Deadline: until position is filled

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