

PhD Student (f/m/d)

with a background in Chemistry, Physics, Material Science, or similar

Characterization of fluorine free proton exchange membranes for fuel cells for electric aircraft

Context

Fuel cells play a key role in reducing CO₂ emissions in the transport sector by converting the chemical energy of hydrogen into electrical energy to power the vehicle. However, the efficiency of state-of-the-art fuel cells is mainly limited by transport processes in the electrodes. This project aims to improve the efficiency and make fuel cells more competitive. For this purpose, the current understanding of the phenomena limiting the performance and durability will be investigated.



Your task

You will be working in a national project with the aim to develop fuel cells for aviation. You will characterize the latest fluorine free polymers and develop membrane electrode assemblies (MEAs) with them. You will investigate the material properties and correlate them with their performance in operating fuel cells. Thus, the work ranges from material analysis (DMA, TGA, SEM, EDX,...) and fabricating of own fuel cell MEAs to electrochemical measurements (fuel cell tests, electrochemical impedance spectroscopy...).

Your profile

- Excellent communication skills and team spirit are necessary
- You are interested in the development of novel materials for sustainable aviation
- You work target-oriented and structured
- You enjoy working with measurement methods and are interested in the physical relationships

The position

- We offer excellent working conditions in the interdisciplinary “electrochemical energy systems” EES group with a friendly atmosphere
- Cutting edge equipment for fuel cells and material characterization
- The typical duration of a PhD is planned for three years (80% TV-L 13)
- The working language is English or German
- Earliest possible start: November 2022
- Family-friendly, flexible working hours

For more information, feel free to contact us or visit

www.ees-labs.org

Please send your application via mail to

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