



Start your mission at DLR.

The German Aerospace Center DLR has a dual mandate as the national research center for aeronautics and space, and as the space agency of the German federal government. Approximately 11,000 people work for DLR on a uniquely diverse range of topics spanning the fields of aeronautics, space, energy, transport and security research. They collaborate on projects extending from fundamental research to the development of the innovative applications and products of the future. If the idea of joining a top-class team of researchers working in a supportive, inspirational environment appeals to you, then why not launch your mission with us?

The DLR's Institute of Engineering Thermodynamics is working on the utilization of technologies of energy conversion that are efficient and accommodating on resources as well as on the accelerated utilization of renewable energies. In a collaboration framework between "Techno-economic Analysis" and "Low Temperature Electrolysis Systems" research groups, we are searching to fulfil the following task:

Master thesis: Techno-economic analysis and optimization of a alkaline water electrolysis in the Power-to-Methanol process

Setting up a highly pressurized and flexible process model for the alkaline electrolysis to identify its ideal operating conditions within the Power-to-Methanol process to maximize the efficiency and to minimize the cost.

Your mission:

The German Aerospace Center (DLR) is supporting industry in developing a process for the large-scale production of sustainable methanol. Power-to-methanol (PtM) allows to chemically store renewable electricity and to produce a sustainable product to substitute the fossil-derived one. Within the scope of your master thesis, the following steps will have to be accomplished:

- Literature research on Power-to-methanol through highly pressurized alkaline water electrolysis
- Setup up of a process model in the process simulation software AspenPlus®
- Technical optimization of the process using python-based software tools
- Preparation of a techno-economic comparison with DLR in-house software

Your qualifications:

- Student in process engineering, chemical engineering, or a related field
- Good knowledge of flow diagram simulation software (Aspen Plus®, CHEMCAD, etc.)
- Good and well-structured programming skills (Python, MATLAB, etc.)
- Good knowledge of alkaline water electrolyzers is beneficial
- High receptivity, initiative, and independence
- **Good communication and presentation skills in English**
- The prerequisite for employment at DLR is security clearance in accordance with the German Security Clearance Act (SÜG) and the willingness to undergo a security clearance in accordance with §8 ff SÜG

Your start: As of now

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DLR

Deutsches Zentrum
für Luft- und Raumfahrt



Zertifikat seit 2002
audit berufundfamilie



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