Job posting

Type of position

- [X] scientific
- [ ] administrative

Target group

- [X] graduates
- [X] post docs
- [ ] other

Title

Investigation of solid oxide fuel cell systems (SOFCs) using alternative fuels in future maritime energy systems.

Institution

The DLR Institute for Maritime Energy Systems researches and develops innovative solutions for the defossilization of-, emissions reduction from-, and enabling increased usage of renewable energy in, waterborne transport. In cooperation with the maritime industry, the developed solutions are transferred into practice. The institute is building large-scale testing infrastructure consisting of an onshore laboratory and a research vessel to test and develop modular energy and ship concepts. This will create an unprecedented range of testing capabilities, efficiently enable method and concept validation through data analysis, and ensure the reliability of the solutions.

Position

Research Scientist, with the possibility to pursue doctoral or postdoctoral research opportunities
- Full-time position, part-time possible
- Originally limited to 3 years
- Remuneration up to TVöD 14, depending on qualification

Responsibilities

Solid oxide fuel cells (SOFC) are promising energy converters for use in future maritime energy systems due to their high efficiency and fuel flexibility. As part of the Horizon Europe project "HELENUS", the candidate will research simulation methods to investigate the fuel flexibility of SOFC systems and contribute to subsequent experimental research to validate the results in our test facility.

Your responsibilities include:
• Research into simulation methods for investigating the fuel flexibility of SOFC systems
• Selection of appropriate research methods and tools for the simulation and experimental testing of SOFCs
• Literature review to identify state-of-the-art and identification of new research topic
• Posing appropriate hypotheses
• Planning and determination of methods to test the hypotheses
• Development of simulation models to evaluate the flexibility of SOFC modules for operation with future renewable marine fuels
• Validation of the operation of the SOFC system
• Your results will be the contribution to the subsequent experimental research for the validation of the results in the test facility
• Make statements about the confirmation of hypotheses
• Data collection and evaluation to draw conclusions from experiments
• Publication and dissemination of research results internally and externally
• Completion and monitoring of assigned budget plans for project budget compliance
• Proposal of new tasks and research topics for the strategic development of the research area, department, and institute
• Generation of new IP and filing of patents
• Acquisition of third-party funding, and potential take-over of the project management activities in coordination with the department leader
• Supervision and guidance of undergraduate and graduate students

Requirements
• Completed Master’s degree in Chemical, Mechanical, Energy System, Shipbuilding engineering or a similar course of study relevant to the job
• Experience in the operation and validation of fuel cell systems
• Experience with the use and handling of alternative fuels, including knowledge of relevant safety standards
• Knowledge in designing, constructing and conceptualizing test rigs with SOFC systems on ships
• Extensive English language skills

Application procedure (deadline etc.)
- Expected start at the earliest opportunity
- Please apply directly at the job advertisement: https://www.dlr.de/dlr/jobs/desktopdefault.aspx/tabid-10596/1003_read-49614/
- Although the job posting is in German, applications in English are accepted

Contact
Dr. Dheeraj Gosala - dheeraj.gosala@dlr.de
Dr. Jürgen Ortner - juergen.ortner@dlr.de