

17J010 - Internship Proposal

Title: Data analysis of hydrogen refueling stations in demonstration projects

EIFER (European Institute for Energy Research) was established in 2001 as collaboration between the Karlsruhe Institute of Technology (KIT) and Electricité de France (EDF). Today, EIFER has an international team of more than 100 researchers.

One focus of EIFER's activities is on hydrogen and fuel cell technologies, from carbon free production via water electrolysis to different applications of hydrogen and fuel cells, including stationary production of electricity, industrial applications and hydrogen mobility. In particular, hydrogen used in fuel cell vehicles can enable to decarbonize the transport sector and reduce local pollution in cities. There are already hydrogen refueling stations in Europe. However, there is still the need to demonstrate their ability to meet the requirements of the mass market, in terms of reliability, safety and efficiency as well as the economic viability of the business models proposed. In order to assess these criteria, EIFER is involved in several demonstration projects.

The hydrogen team of EIFER is currently looking for a student in the scope of demonstration projects on hydrogen refueling infrastructure.

The assigned tasks involve

- ▶ A literature review of the state-of-art
- ▶ Structuration of the field data available.
- ▶ Data treatment and analysis of the performances of the installation. The analysis will cover: the efficiency of the entire station as well as specific components, the analysis of the availability of the equipment, the analysis of the behavior of the users of the station.
- ▶ Development of programming tools enabling to perform automatised reports and analysis of the installations. These tools will be based on SQL and Matlab.
- ▶ Perform a technical-economic assessment of the installation
- ▶ Depending on the advancement of the previous tasks, the student may be involved in additional activities related to the demonstration project
- ▶ Writing a feedback report on the activities
- ▶ Contributions to writing deliverables of the project.

The assigned tasks may be performed in the framework of a master Thesis.

Required qualifications / skills / interests

The position is aiming at students in mechanical/electrical engineering. The following skills are mandatory:

- ▶ strong knowledge in energy sciences, including thermodynamics
- ▶ fluent in English and either German or French
- ▶ previous experience in programming in at least one programming language (C++, Matlab, etc.)
- ▶ basic understanding of SQL data base & SQL programming would be of value but is not mandatory
- ▶ knowledge of hydrogen technologies would be of value but is not mandatory

Conditions

- ▶ Duration: 6 months, starting at soon as possible
- ▶ Location: EIFER, Emmy-Noether-Str. 11, 76131 Karlsruhe, Germany
- ▶ Working hours: 39.5 hours per week
- ▶ Monthly compensation: 450 €

Contact

If you want to join a highly motivated research group, please forward your application including all relevant information (curriculum vitae and cover letter, in French or English) to jobs@eifer.org.

Please refer to the offer **number 17J010!**

For additional information concerning the work please contact: David Colomar, colomar@eifer.org,
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