

## 24J016 - Internship proposal

### Title: Innovative ammonia synthesis: set-up of a test station, synthesis and characterization of electrochemical cells

Are you interested in working on e-fuels?

The European Institute for Energy Research EDF-KIT EWIV (EIFER) is looking for a

#### **Trainee (f/m/d)**

in the research group “Low carbon hydrogen Systems”.

The European Institute for Energy Research was founded by EDF and the KIT in 2002 aiming at enhancing collaboration through joint projects applied to industrial issues and utilities' needs. With its applied research orientation EIFER is bridging the gap between science and industry for more than 20 years. In the context of the European energy transition, EIFER provides research-based innovative energy solutions for the sustainable development of cities and communities, economic activities, and territories.

Since years, EDF via EIFER deeply extended its activities in research and development on non-carbon energy technologies (electrolysis, fuel cell and battery) and its know-how in the elaboration of high performing ceramic materials and cell processing has been increasing.

The training is based on a twofold objective:

- ✓ Set up a new electrochemical testing facility for various operation conditions and use it to investigate innovative synthesis of ammonia;
- ✓ Assess the integration of new materials / layers into an electrochemical assembly dedicated to ammonia synthesis.

Different kind of systems will be manufactured and characterized:

- ✓ Macro- and microscopic analysis by SEM, EDX and XRD;
- ✓ In-situ electrochemical measurements by impedance measurement and IV curves.

### The assigned tasks involve

- ✓ A literature review of the state-of-the-art
- ✓ Manufacture of ceramic samples
- ✓ Electrochemical measurements and data treatment/analysis
- ✓ Regular reporting to the head of the laboratory
- ✓ Maintenance and organization of the laboratory

### Required qualifications/skills/interests

The position is aiming to Master-students in chemical engineering, solid state chemistry, material science.

- Background on fuel cell, electrochemistry, solid state science
- Ability to conduct a detailed review of literature and a specific project
- Ability to work in autonomy and to organize own work with minimal supervision
- Ability to write/communicate in English and either in French/German highly desirable
- Discipline and regard for confidentiality, security and safety at all times

## What you can expect

- A stimulating, multicultural and multidisciplinary environment
- An institute at the intersection between academic research and one of the largest energy utilities in Europe
- If the opportunity arises: participation to conferences, involvement in scientific publications

## Conditions

- Duration: 6 months
- Starting date: as soon as possible
- Location: ElfER, Emmy-Noether-Str. 11, 76131 Karlsruhe, Germany and KIT-ITCP, Engesserstrasse 20, 76131 Karlsruhe
- Working hours: 39.5 hours per week
- Monthly compensation: 550 € for a compulsory internship

## Contact

If you want to join a highly motivated research group, please forward your electronic application with one single pdf of max. 5MB including all relevant information (curriculum vitae and cover letter) to [jobs@eifer.org](mailto:jobs@eifer.org). **Please refer to the offer number 24J016.**

For additional information concerning the work please contact: [julian.dailly@eifer.org](mailto:julian.dailly@eifer.org)