

24J010 - Internship proposal

Title: **Mapping subsurface-hydrogen projects (natural hydrogen and geological H₂ storage)**

Are you interested in working on underground solutions for the hydrogen market?

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.

The internship deals with 2 subsurface solutions provided to the hydrogen market: natural hydrogen and underground storage.

1) Natural hydrogen refers to hydrogen naturally produced in the Earth crust by processes such as serpentinization or water radiolysis. This emerging sector has recently gained momentum. New projects are going on all around the world to explore this new energy resource and better understand geological processes leading to natural hydrogen systems.

Mapping natural hydrogen resources is a key to figure out what could be its role in the energy transition.

The intern will support the EIFER team in the establishment of a natural H₂ database, based on geographical information system (GIS). The intern will carry out a scientific literature review to map and characterize prospects (resources, H₂ purity, flow rate, etc.).

Based on this mapping, the potential synergies with electrolytic H₂ projects already identified (location, clients, planned infrastructures, etc.) will be deduced.

2) Underground storage is a promising solution to offer large hydrogen storage capacity, essential to smooth the intermittency of renewable energies production and ensure continuous supply.

Similarly, the intern will integrate key information of on-going industrial and academic storage pilots in the EIFER platform: status, key return of experience, quantity of stored hydrogen, etc.

The assigned tasks involve

- Literature review and desktop study
- Data structuring
- Written report
- Final oral presentation of the results

Required qualifications / skills / interests

The position is aiming to Master-students in geosciences and candidates with:

- Curiosity for subsurface hydrogen, knowledge of the sector and/or a specialization in the energy field will be highly appreciated
- A very good level in English is mandatory (written and spoken)
- Interest and perseverance to search for information and data and to cross-reference data from different sources

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: March 2024
- Location: EIfER, Emmy-Noether-Str. 11, 76131 Karlsruhe, Germany
- 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. **Please refer to the offer number 24J010.**

For additional information concerning the work please contact: elodie.jeandel@eifer.org;
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