JÜLICH
Forschungszentrum

Conducting research for a changing society: This is what drives us at Forschungszentrum Jülich. As a member of the Helmholtz Association, we aim to tackle the grand societal challenges of our time and conduct research into the possibilities of a digitized society, a climate-friendly energy system, and a resource-efficient economy. Work together with around 7,400 employees in one of Europe's biggest research centres and help us to shape change!

At the Institute of Energy and Climate Research - Fundamental Electrochemistry (IEK-9), we perform research on highly relevant topics related to the energy transition. For example, we investigate new battery concepts and how we can turn the greenhouse gas carbon dioxide (CO_2) to the fuel of the future. The aim is to develop sustainable and cost-effective electrochemical systems with improved energy and power density, longer life time, and maximal safety. Find out more about our mission and future-oriented projects here: https://go.fzj.de/IEK-9

We are offering a

Master Thesis – Development of Iron Anodes for Iron-Air Batteries

Your Job:

In renewable energy supply, battery storage is of interest for the security of supply, especially for stationary, decentralized applications. The concept of iron-air batteries represents an attractive alternative to already commercially available battery technologies due to their inherently high energy density and low cost as well as simple and robust materials. The surface morphology and formation process of iron electrodes play a crucial role in their cycling stability during battery operation. To improve the battery performance, the development of stable and efficient iron electrodes is required, which can be fabricated via different manufacturing methods. Your tasks will include:

- Developing, fabricating, and optimizing electrodes using various manufacturing methods
- Conducting electrochemical experiments to investigate the performance of the electrodes using cyclic voltammetry (CV) and galvanostatic cycling with potential limitation (GCPL)
- Spectroscopic characterization of the electrodes using X-ray diffraction (XRD), energy dispersive X-ray spectroscopy (EDX), and scanning electron microscopy (SEM)
- Documenting and visualizing the obtained results in presentations

The job will be advertised until the position has been successfully filled. You should therefore submit your application as soon as possible. We look forward to receiving your application via our **Online-Recruitment-System!**

Questions about the vacancy?

Get in touch with us by using **our contact form.**

Please note that for technical reasons we cannot accept applications via email.

www.fz-juelich.de

Your Profile:

- Ongoing Master studies in chemistry, chemical engineering, material science, or a comparable field of study
- Interest in the research field of battery development
- Previous experience in electrochemistry is an advantage
- Laboratory experience is desirable
- A high degree of independence and initiative
- Good command of written and spoken English; knowledge of German is an advantage

Even if you do not fullfill the requirements of this position completely, we are happy to receive your application. We want you to fit in as a person, not just based on your profile.

Our Offer:

We work on the very latest issues that impact our society and are offering you the chance to actively help in shaping the change! We support you in your work with:

- Flexible work (location) arrangements, e.g. remote work
- Reasonable compensation of your work
- Ideal conditions for practical experience alongside your studies
- Comprehensive training courses and individual opportunities for personal and professional further development
- Extensive company health management
- Ideal conditions for balancing work and private life, as well as a family-friendly corporate policy

In addition to exciting tasks and a collaborative working atmosphere at Jülich, we have a lot more to offer: https://go.fzj.de/benefits

We welcome applications from people with diverse backgrounds, e.g. in terms of age, gender, disability, sexual orientation / identity, and social, ethnic and religious origin. A diverse and inclusive working environment with equal opportunities in which everyone can realize their potential is important to us.