At the Institute of Energy and Climate Research - Fundamentals of 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 (CO2) into 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 looking to recruit a

**Postdoc – Optimization of the reactor architectures for the electrochemical reduction of CO2**

**Your Job:**
To meet the challenges resulting from the structural change our research focus on climate-friendly and sustainable technologies. One approach is the electrochemical reduction of carbon dioxide to produce value added platform and bulk chemicals for further industrial applications. Our goal is to improve the performance of this technology by using different strategies. Your task is the realization and optimization of novel electrochemical reactors (electrochemical flow cells) with respect to the efficiency of the performed reaction and there possible application in larger value chains. A special aspect of the CO2 reduction is the use of gaseous and liquid reactants at the cathode which are transformed to gaseous and/or liquid products. This results in special challenges for the reactor architecture depending on the desired products and their further utilization. Your task include:

- Improving and expanding of experimental setups for testing electrochemical reactor architectures on laboratory scale
- Designing and production of new components for electrochemical reactors
- Fabrication, characterization and optimization of technical electrodes (GDE, MEA)
- Further development of electrodes which were designed for gaseous products for...
the electro synthesis of volatile liquid products
• Analysis and quantification of all relevant products using chromatographic measurement systems
• Development and optimization of new concepts and research approaches in the field of reactor design
• Interdisciplinary collaboration with colleagues from related fields and value chains, as well as with various internal and external service providers
• Supervision of doctoral students and undergraduates
• Publication of scientific results in journals and at conferences

Your Profile:
• Completed master’s degree and doctorate in process engineering, chemistry, physics or a comparable field
• Knowledge in the field of electrochemistry, chemical reaction engineering as well as in the field of production and characterization of materials and components
• First experience in supervising students
• Independent and responsible way of working
• High degree of ability to work in a team as well as enjoyment of cooperative collaboration
• Fluent language skills in English and preferably also in German

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:
• A large research campus in the countryside, which offers the best opportunities for networking with colleagues as well as for sporting relaxation alongside your work
• Comprehensive training offers and individual opportunities for personal and professional development
• Comprehensive company health management
• Optimal conditions for work-life balance and a family-friendly corporate policy
• Flexible working hours and a full-time position with the option of slightly reduced working hours
• The opportunity to work flexibly (in terms of location), e.g. 1-2 days per week in a home office and depending on the focus of the task at hand
• 30 days of annual leave as well as an arrangement for bridging days (e.g. between Christmas and New Year’s Day)
• Targeted services for international employees, e.g. through our International Advisory Service

The position is initially for a fixed term of 2 years, with possible long-term prospects. Salary and social benefits in conformity with the provisions of the Collective Agreement for the Civil Service (TVöD).

Forschungszentrum Jülich promotes equal opportunities and diversity in its employment relations. We also welcome applications from disabled persons.