As a member of the Helmholtz Association, Forschungszentrum Jülich makes an effective contribution to solving major challenges facing society in the fields of information, energy, and bioeconomy. It focuses on varied tasks in the area of research management and utilizes large, often unique, scientific infrastructure. Come and work with around 6,100 colleagues across a range of topics and disciplines at one of Europe’s largest research centres.

We look forward to receiving your application until 06.11.2019 via our Online-Recruitment-System!

Questions about the vacancy?
Contact us by mentioning the reference number 2019D-194:
career@fz-juelich.de
Please note that for technical reasons we cannot accept applications via email.
www.fz-juelich.de

The Institute of Energy and Climate Research – Electrochemical Process Engineering (IEK-3) specializes in electrochemical converters with electrolytes composed of polymer membranes (PEM-FCs & EC) and ceramics (SOCs) as well as chemical converters for autothermal reforming, catalytic gas treatment, and fuel synthesis.

Electricity can be used as energy input to enable novel electrocatalytic conversions at mild conditions. A particularly promising route is the conversion of CO2 to CO (carbon monoxide) using the so-called CO2 electrolysers. Annual production for carbon monoxide ranges around 75 Mt, with main feedstocks being methane and coal. CO is an important intermediate for the production of petrochemical products and plastics. The core idea of the EL-Cat project is to investigate and enable a radically novel and unprecedented CO2 reduction technology. In comparison to existing CO production processes, this new route promises lower CO2 emissions and can help to reach CO2 reduction targets. The core concept consists of the world’s first platinum group metal (PGM) free CO2-electrolyzer with high selectivity in an aqueous electrolyte using anion exchange membranes (AEM). The focus of the PhD study is to integrate optimized key components such as membrane electrode assemblies, porous transport layers, flow fields into highly efficient and durable cells and stacks for CO2 electrolysis.

We are offering a

2019D-194 - PhD Position - Development and Integration of Components and Stack Concepts for CO2 Electrolyzers

Your Job:
• Design, engineering and construction of stack components
• Physical chemical and electrochemical characterization of short stacks
• Assessment of durability profiles and degradation mechanisms as well as development of accelerated stress tests
• Post-mortem analysis of cell components
• Unveiling morphological changes which occur during device operation

Your Profile:
• Master’s degree in material science, chemical/mechanical engineering or a related field with above-average results
• Previous experience in dimensioning and construction of mechanical, electrochemical or process engineering devices
• Previous experience in testing of devices using electrochemical stack platforms
• Previous experience in physical chemical characterization methods and/or analytical chemistry
• Full competence in the English language (written and spoken)
• Good command of German, spoken and written is an advantage

Our Offer:
• Outstanding scientific and technical infrastructure - ideal conditions for successfully completing a doctoral degree
• World-Class Infrastructure and Laboratory Facilities
• A highly motivated group as well as an international and interdisciplinary working environment at one of Europe’s largest research establishments
• Chance of participating in (international) conferences and project meetings
• Continuous, professional support by your scientific supervisor
• Further development of your personal strengths, e.g. via a comprehensive further training programme
• Pay in line with 75 % of pay group 13 of the Collective Agreement for the Public Service (TVöD-Bund)
• Usually a contract for the duration of 3 years

Forschungszentrum Jülich aims to employ more women in this area and therefore particularly welcomes applications from women.

We also welcome applications from disabled persons.