

We are one of the youngest universities in Germany and think in terms of possibilities, not limitations. In the heart of the Ruhrregion, we develop ideas of the future at our 11 faculties. We are strong in research and teaching, live diversity, support potential and are highly committed to an educational equality that has earned this name.

The **University Duisburg-Essen** offers at the **Campus Duisburg** in the Faculty of Engineering, Department of Mechanical and Process Engineering a

PhD position (m/f/d) for the project

"Materials development for the technical generation of H₂ by improved gas diffusion electrodes"

(Full-time 100%, Salary: TV-L 13)

at the Process Technology for Electrochemical Functional Materials group, located on the Duisburg Campus.

The aim of the cross-sectional project PrometH₂eus is to advance the application-oriented development of more efficient anode materials for hydrogen production by alkaline water electrolysis. New materials are developed and optimized with respect to industry-relevant parameters in order to guarantee reliable performance in later applications. To this end, PrometH₂eus bridges the gap between basic materials science and application-oriented electrode production.

To achieve this goal, PrometH₂eus combines the expertise of more than 20 renowned research groups as well as three major corporations, which cooperate closely with each other in the fields of synthesis, understanding and application. The electrode development is accompanied by state-of-the-art analytics and simulation approaches, as well as tests for technical applicability in comparison to benchmarks, which are accompanied by the industrial partners. In particular we will optimize electrode development using reference materials, optimize electrode properties through holistic modification/manufacture of electrodes and adapt methods to materials developed by our partners.

We offer:

- Exciting development potential in the rapidly expanding research field of energy conversion
- A highly creative, interdisciplinary and international environment with room for own ideas and their realization by means of a sustainable, future oriented technology
- New and very well-equipped laboratories and analytical technology
- A young, open-minded and motivated team

Requirements:

- M.Sc. in science or engineering
- Interest in disperse systems and nanoparticle technology
- Ability to conduct independent research, high motivation and reliability
- Team spirit
- Interest to work in an international and interdisciplinary environment

Assignments:

- Characterization and processing of new materials into electrodes for H₂ generation
- Development of standards and routine procedures for powder, dispersion and coating characterization

- Improvement of processing steps based on the feedback from partners on electrochemical performance
- Adaption of the developed technologies and methods to new materials generation by partner projects within the consortium

Proposed starting date: 01.08.2021 or later
Duration of contract: until 31.03.2025
Working hours: 100% of a full-time position
Application deadline: 30.06.2021

The University of Duisburg- Essen pursues the goal of promoting the diversity of its members (see <http://www.uni-due.de/diversity>)

It aims to increase the proportion of women among academic staff and therefore strongly encourages relevantly qualified women to apply. In accordance with the State Equal Opportunities Act, women with equal qualifications are given preferential consideration.

Applications from suitable severely disabled persons and persons of equal status within the meaning of § 2 Para. 3 SGB IX are welcome.

Please send your application with the usual documents (cover letter, curriculum vitae, list of scientific publications, documents on your scientific and professional career, copies of certificates, presentation of your own research profile as well as third-party funds acquired) to Prof. Doris Segets, University of Duisburg-Essen, phone +49/203/37-98230, e-mail: doris.segets@uni-due.de., quoting the **reference number 435-21** as a single, coherent PDF file.

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