We are a young, innovative university in the middle of the Ruhr Metropolis. We are strong in research and teaching, we think in terms of possibilities instead of limits and develop ideas with a future. We live diversity, promote potential and are committed to educational justice that earned this name.

The **University of Duisburg-Essen** invites applications for the position of a

Scientific Researcher (f/m/d)

(Payment according to Grade E 13 TV-L, 100 %)

at the Faculty of Chemistry, Theoretical Inorganic Chemistry (located at the campus in Essen).

The working group Theoretical Inorganic Chemistry, headed by Prof. Dr. Kai S. Exner, deals with the theoretical description of catalytic processes at electrified solid/ liquid interfaces for electrochemical applications.

Main research topics and duties:
Scientific participation in the research project "Multiscale Modeling to Discover Low-Cost Electrode Materials Based on MXenes for Metal-Air Batteries" within the NRW Return Grant of Prof. Exner. The focus of this position is on the theoretical description of the electrochemical CO_2 reduction over MXenes. It is the aim to discover material motifs revealing CO_2 reduction toward valuable platform chemicals, thereby overcoming the selectivity challenge relating to the competing hydrogen evolution reaction.

An exemplary overview of the methods used in the Exner group can be found in the literature:
K. S. Exner, *ACS Catal.* **2020**, *10*, 12607-12617.
S. Razzaq, K. S. Exner, *Electrochim. Acta* **2022**, *412*, 140125.
T. He, K. S. Exner, *Mater. Today Energy* **2022**, *28*, 101083.
S. Razzaq, K. S. Exner, *ACS Catal.* **2023**, *13*, 1740-1758.
K. S. Exner, *Mater. Horiz.* **2023**, *in press*, DOI: 10.1039/D3MH00047H.

In addition, the scientific researcher will be involved in the implementation of teaching activities or administrative tasks.

Please note: a completed PhD is a **requirement** for this position!

Required qualifications:
Completed university degree in chemistry, physics, or informatics of at least 8 semesters and an excellent PhD degree in the area of theoretical chemistry or theoretical physics. A good degree (min. 2.0 according to the German grading system) is required. Very good written and spoken English skills are also a prerequisite. In addition, knowledge in the application of electronic structure calculations (density functional theory, e. g., VASP, WIEN2k, CP2K or SeqQuest) are expected. Knowledge in the field of (theoretical) electrochemistry is not required but will be considered positively in the application process.

We offer:
- A varied, versatile range of tasks in a research-driven environment with international exchange
- An interesting, responsible job with great creative potential, in which you take upon responsibility and establish networks with experimental working groups
- A pleasant and open working atmosphere in a dynamic, young, and intercultural team
- Family friendliness through flexible and individual care for your children
- Further education offers
- A company ticket for public transport
- Opportunity to participate in sports and health programs (university sports)

Expected start of position: October 1, 2023

Contract period: 24 months (2 years)

Working time: 100% of a full-time employment

Application deadline: June 22, 2023

The University of Duisburg-Essen aims to increase the diversity of its members (see http://www.uni-due.de/diversity). It also aims to increase the number of women among its academic staff, and therefore

encourages women with pertinent qualifications to apply. Women with equal qualifications will be preferred in accordance with state equality laws. Applications of qualified disabled persons in the legal sense of § 2 para. 3 SGB IX are also welcome.

Please submit your application (motivation letter, CV, diplomas, transcript of modules taken with grades, PhD certificate, a letter of recommendation) quoting **reference 260-23** to Prof. Dr. Kai Exner, Universität Duisburg- Essen, Fakultät für Chemie, Campus Essen, 45117 Essen. Please compile your application in a single PDF file and send it via email to kai.exner@chemie-ude.de.

Information on the University Duisburg-Essen is available at:
www.uni-due.de
https://www.uni-due.de/chemie/ak_exner/publication