

We are a young, innovative university located in the heart of the Ruhr metropolis. We pride ourselves in outstanding research and teaching, think in terms of opportunities rather than limitations and develop ideas with a view to the future. Diversity is an integral part of our culture as we promote potential and are committed to upholding genuine equity in education.

The **University of Duisburg-Essen (UDE)** at the **Campus Essen** at the Faculty for Chemistry, Technical Chemistry I, is searching for a

scientific researcher (f/m/d)
(salary group 13 TV-L, 67 %)

The Technical Chemistry I is one of the largest institutes at the Faculty for Chemistry and focuses on the synthesis of nanomaterials by laser processing in liquids and their integration into real world applications. We currently employ a young, innovative and highly motivated team of more than 20 PhD students and aspire not only to understand fundamental processes in nanoscience but also aim to develop the resulting materials into real-world applications.

Your main tasks:

Your work will be centered in the field of high entropy alloy (HEA) nanoparticles. Main feature of these particles is that they consist of at least 5 metal components, which arrange into a relatively homogeneous (solid solution) structure, which offers a multitude of interesting applications e.g. in the field of heterogeneous catalysis.

Major objectives of your work will be to pinpoint the compositional range in which HEA solid solution structures form and based on this develop synthetic design rules for these materials and elucidate the particle formation mechanism. This entails:

- Synthesis and characterization of HEA nanoparticle colloids
- Interpretation of electron microscopy data to determine the particle's composition and internal phase structure (in collaboration with a project partner)
- Electrochemical characterization of HEA nanoparticle colloids

Your profile:

- Master of Science degree in Chemistry or Material Science with a background in Physical Chemistry and/or Nanomaterials
- Knowledge in synthesis, handling, and characterization of colloidal nanoparticles
- Solid understanding of bi- and multicomponent alloy systems on the nanoscale
- Basic understanding of electron microscopy techniques (with focus on data interpretation) and cyclic-voltammetry is required
- Previous experience with pulsed lasers and optical setups is desired but not required
- Familiarity with research data documentation and design of experiments as well as a thorough and structured way of working are highly beneficial
- Ability to work in an international and interdisciplinary team

We offer:

- a varied, multifaceted field of activity in a research-intensive environment
- an interesting, responsible job with great creative potential, where you will get to know the diverse tasks and developments of research transfer and have contacts with almost all areas of the UDE
- Interdisciplinary research at a very high level
- a non-discriminatory working environment with respectful, appreciative cooperation
- a pleasant working atmosphere in a dynamic team
- a broad range of further education and training opportunities, individual induction training
- possibility of partially working remotely

Anticipated start of employment:	01.08.2023
Duration of employment	36 months
Working hours	67% of a full time position
Application deadline	within 6 weeks after publication

Please direct your application with all documents via E-mail (cover letter, CV and certificates) summarized as a joint PDF and reference to this application (application number 345-23) to Dr. Christoph Rehbock, Universität Duisburg-Essen, Fakultät für Chemie, 45117 Essen, Phone ++49201/183-3040, E-Mail Christoph.rehbock@uni-due.de.

Information about the faculty and the institute can be found under:

<https://www.uni-due.de/barcikowski-group/>

<https://www.youtube.com/@nanofunction>

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

In accordance with the State Equal Opportunities Act, women with the same qualifications are given preferential consideration.

Applications from suitable disabled persons and persons of equal status within the meaning of § 2 para. 3 SGB IX are desired.

