

We are a young, innovative university in the heart of the Ruhr metropolis. Recognized for excellence in research and teaching, we think in terms of possibilities rather than limitations and develop ideas for the future. We embrace diversity, foster potential, and are committed to educational justice that truly deserves its name.

The **University of Duisburg-Essen** at the **Duisburg campus** in the Faculty of Physics, Department of Experimental Physics/AG Farle, is looking for

a research assistant (w/m/d) for the PhD or Post-doc position.
(Salary equivalent to TV-L 13, 75% or 100% with corresponding qualifications)

Description:

The topic of the research activity is in the exciting and currently expanding research field of magnetic high entropy alloys (MagHEA). The aim is to develop new types of magnetic HEA powders by using high energy ball milling and consolidate these particles into macroscopic MagHEA materials by spark plasma sintering (SPS) and by additive manufacturing (AM) These MagHEAs can be used as soft magnetic and/or magnetocaloric materials in various innovative areas of application. A fundamental understanding of the relationship between microstructure, chemical composition and magnetism will be developed. In addition to production and processing, structural and chemical analyses using high-resolution X-ray and electron spectroscopic methods as well as methods of magnetic analysis using modern broadband microwave spectroscopy and magnetometry will be studied and applied.

Within the framework of the activity, opportunities for further scientific qualification are offered.

Expected qualifications:

- Master's degree (or PhD with corresponding qualifications) in experimental physics, chemistry, materials science or a related discipline with a strong experimental background;
- Excellent experimental skills in the synthesis of metallic alloy powders and their consolidation into bulk materials by sintering and melting routes (e.g., SPS, hot pressing, arc melting);
- Strong knowledge in basic physics, solid state physics, X-ray diffraction and chemical (EDX, EELS) analysis; Scanning and transmission electron microscopies;
- Broadband microwave spectroscopy and magnetometry;
- Structured and independent way of working, coupled with the ability to work in a team with creative minds;
- Very good knowledge of German or English, both written and spoken.

We offer:

- A varied, multifaceted area of responsibility with great creative potential in the field of tension between physics and materials science in an international team
- An active interdisciplinary research activity with access to state-of-the-art equipment
- A pleasant working atmosphere in our dynamic team
- the opportunity to do a doctorate with numerous support offers
- Further education offers and career advancement within the framework of the diverse offers of the university

Starting date: 01.12.2023

Duration: 36 months

Working hours: 75% to 100% of a full-time position, depending on qualifications

Application deadline: 04.10.2023

Please send your application (including CV, statement of interest and background, diplomas/transcripts in a single pdf), stating the reference number **545-23**, to **Prof. M. Farle**, University of Duisburg-Essen, Faculty of Physics, 47048 Duisburg, Telephone (Ass.) +49 203-379 - 2382, Email helga.mundt@uni-due.de.

Information about the faculty and AG Farle research group can be found at: <http://www.uni-due.de/agfarle/>. The University of Duisburg-Essen aims to promote the diversity of its members (see <https://www.uni-due.de/diversity>). It is striving to increase the proportion of women in the scientific staff and therefore urges suitably qualified women to apply. According to the NRW State Equal Opportunities Act, women are given preferential treatment if they have the same qualifications. Applications from suitable severely disabled people and people of equal status according to § 2 (3) SGB IX are encouraged.