

Information for applicants for the W3 professorship in “Experimental physics with a focus on magnetism”

at the Faculty of Physics

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1. The University of Duisburg Essen (UDE)

We are a young, innovative university located in the heart of the Ruhr metropolis. We pride ourselves on 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.



Duisburg campus

Located in the heart of the Ruhr metropolis, the University of Duisburg-Essen (UDE) is one of Germany's youngest universities and also among its strongest in research. The courses range from the humanities, social sciences and educational sciences via economics and business studies all the way to the engineering sciences, computer sciences and natural sciences (including medicine).

UDE embodies responsibility for the future. Our values – openness and internationality, diversity, equal opportunity and sustainability – guide our actions, research, teaching and learning.

UDE's research profile is distinguished by the strategic identification, consistent promotion and systematic advancement of promising, innovative ideas – and this is true of both fundamental and applied research and extends to the transfer of knowledge into industry and society. Our many internal and affiliated institutes also bear witness to this.

The cornerstones of UDE's research profile are the University-wide strategic research areas, which are shaped and advanced by numerous researchers in twelve faculties and fourteen inter-faculty research centres. Cooperative research projects have just as vital a place here as excellent individual research.

With innovative and digitally supported teaching and learning concepts, UDE enables research-based learning from the start. The University offers around 38,000 students from 130 countries a wide range of courses of study, including teacher training.

UDE is considered a paradigm throughout Germany of how equity in education can be implemented at a university with a strong track record in research. Numerous measures and projects are in place to support talented young people and offer them prospects. UDE considers itself a vibrant environment of diversity and openness where students, researchers and staff can realise their potential and willingness to perform.

In a strategic partnership, UDE is affiliated with Ruhr University Bochum (RUB) and TU Dortmund University. Together, they form the University Alliance Ruhr (UA Ruhr) and collaborate closely to achieve excellence in research and teaching together. With more than 110,000 students and almost 14,000 researchers, the UA Ruhr is one of the largest and best-performing academic hubs in Germany. The UA Ruhr's top-level international research on pressing issues of the future has been consolidated under the umbrella of the Research Alliance Ruhr.

In addition, the UDE maintains partnerships with over 100 universities around the globe and is a founding member of the Aurora European university network, which offers cross-border study programmes.

Learn more: https://www.uni-due.de/imperia/md/content/dokumente/im-age_broschuere_en.pdf

UDE as an employer

Seal of quality from the German Association of University Professors and Lecturers

The University of Duisburg-Essen bears the German Association of University Professors and Lecturers' (DHV) seal of quality for the fair and transparent nature of its appointment proceedings; this seal was first earned in August 2014, with successful re-audits in 2017 and 2022.

Learn more: <https://www.uni-due.de/verwaltung/berufungsmanagement/>

Family-friendliness

UDE systematically promotes and improves the ability of all its members to balance family life with research, work and studying, which it underscored as early as 2010 with its successful participation in the family-friendly university audit (*audit familiengerechte hochschule*). In 2022, UDE joined the *Verein Familie in der Hochschule e.V.* (family in higher education association) and established the UDE-wide *Netzwerk Familie** (family network). This was followed in 2024 by participation in the *North Rhine-Westphalia state programme Vereinbarkeit Beruf & Pflege* (reconciling work and care).

The Diversity Support Center at UDE offers support through the Family Service Office. Its offerings include personalised consultation on topics related to care, its own daycare facilities, flexible caregivers in emergencies and a holiday activity programme.

Learn more: <https://www.uni-due.de/diversity/en/>

Onboarding and Dual Career Service

The Onboarding team within the Appointment Management Department provide advice for getting started at UDE and can connect you with UDE's other consultation services. They also organise the Dual Career Service, which offers career assistance for both you and your partner.

Learn more: https://www.uni-due.de/en/dual_career.php

Coaching and further training

We see ourselves as a university of potential and work to ensure that all UDE members can contribute and develop their talents and abilities. This includes a wide range of opportunities to develop leadership skills along with coaching for line managers.

Learn more: <https://www.uni-due.de/pe/personalentwicklung>

Promoting good health in the workplace

UDE's occupational health management service works to provide a healthy and pleasant work environment as well as a culture of cooperation and trust. Staff at UDE can take advantage of a broad spectrum of in-person and online options to promote good health, comprehensive sport and fitness offerings provided by the University sport services, balanced meals in the canteens for good nutrition on campus, and many other opportunities.

Learn more: <https://www.uni-due.de/pe/gesundheitsmanagement>

2. Faculty of Physics

The members of the Faculty of Physics work in the fields of experimental physics and theoretical physics and are based at the Duisburg campus of the UDE. In addition, there is the Didactics of Physics, which, like all teacher training programmes, is located at the Essen campus. There are currently 22 full professorships at the Faculty, twelve of which are assigned to Experimental Physics, eight to Theoretical Physics and two to Didactics of Physics. In addition, there is one joint appointment with Forschungszentrum Jülich. Approximately 50 budget positions are available for academic staff. This makes the physics department in Duisburg-Essen one of the largest departments in Germany.

Research

The Faculty has a traditional focus on the subject of condensed matter physics. It is one of the strongest research sites in Germany in this area and covers a wide range of cutting edge topics such as magnetism and magnetic materials, ultrafast and non-equilibrium physics, nanostructure physics, 2D materials, physics of surfaces and interfaces as well as solid state theory and computational physics. The Faculty thus makes a significant contribution to UDE's strategic research area "nanoscience" and contributes to the interdisciplinary Centre for Nanointegration Duisburg-Essen ([CENIDE](#)) with a large number of researchers. The faculty is also involved in the [Research Alliance Ruhr \(RAR\)](#) with one professorship each in the Research Centres 'Chemical Sciences and Sustainability' and 'Future Energy Materials and Systems'.

In addition to condensed matter physics, the Faculty also specialises in other fields that ensure a broad range of disciplines in research and teaching. In Theoretical Physics, the Faculty has a traditional focus on statistical and mathematical physics in addition to solid state theory. Both experimental and theoretical research is carried out on planet and star formation and granular matter. The field of quantum physics, which is becoming increasingly important due to technological applications such as quantum computing, is also dealt with theoretically and experimentally at the Faculty. The didactic working groups focus on empirical studies on the introductory phase of studies, on subject-specific language and experimentation.

Third-party funding

The strength and international visibility of the Faculty is demonstrated by the fact that it has always played a leading role in the acquisition of Collaborative Research Centres and other structured programmes of the German Research Foundation (DFG). The Faculty is currently involved in the [CRC 1242](#) "Non-equilibrium Dynamics of Condensed Matter in the Time Domain", is one of the two sites of the [CRC/TRR 270](#) "Hysteresis Design of Magnetic Materials for Efficient Energy Conversion (HoMMage)" and is involved with several scientists in the [CRC/TRR 247](#) "Heterogeneous Oxidation Catalysis in the Liquid Phase", the International Research Training Group [IRTG 2803](#) "2D-MATURE" and the [RESOLV](#) Cluster of Excellence. Members of the Faculty are also involved as PIs in the SFB/TRR 173 and in DFG priority programmes and research groups as well as in large EU and BMBF projects. In addition, there are numerous individual projects funded by the DFG, foundations and MERCUR, among others.

Teaching

In addition to the physics and physics teaching degree programmes (Bachelor and Master), the Faculty of Physics has been offering the interdisciplinary Bachelor/Master degree programme in Energy Science, which includes a compulsory year abroad, since the winter semester 2011/12. In addition, there is the Bachelor/Master programme NanoEngineering, which is offered together with the Faculty of Engineering, as well as service courses for chemistry, medicine, biology and several engineering subjects.

Just under 1000 students are currently enrolled on the Physics programmes.

Outreach

The Faculty of Physics is making special efforts to get young people interested in physics and to increase the number of students and in particular the proportion of female students. Particularly noteworthy are:

- the [trial study programme](#) (from grade 12);
- the annual school competition “[freestyle-physics](#)” with over 2000 participants;
- the [NanoSchoolLab](#);
- participation in the nationwide [summer university for women in science and technology](#) and in [Girls' Day](#) every year.

3. CRC 270 “Hysteresis Design of Magnetic Materials for Efficient Energy Conversion (HoMMage)”

Magnetism and magnetic materials have been focal points of the Faculty for many years in the field of condensed matter physics, which are investigated using both experimental and theoretical methods. Since 1 January 2020, the Faculty, together with TU Darmstadt and other partners, has been running the [CRC 270 ‘Hysteresis Design of Magnetic Materials for Efficient Energy Conversion \(HoMMage\)’](#), which is currently in its second funding phase.

The goal is the development of new magnetic materials for efficient energy technologies. This requires to gain a detailed understanding of the structural, magnetic and electronic interactions within the material in order to adjust the local and global properties by new processing techniques to be developed like additive manufacturing and severe plastic deformation methods. Material scientists, physicists, chemists and process engineers work on magnetic materials by manipulating individual atoms but also by deforming massive samples. By linking the experimental and theoretical groups together in one research centre they are able to continuously cross-link their developments. Artificial intelligence, which accelerates materials discovery and the rapid identification of the most promising material combinations, is also employed in HoMMage.

The advertised professorship will play a central role in the application for and realisation of the third funding phase of the CRC 270.

4. Information about the open position

University professorship in “Experimental physics with a focus on magnetism”

(W3 salary band as defined in the North Rhine-Westphalian regulations for the W salary range (Landesbesoldungsordnung W))

We are looking for an internationally recognised researcher to strengthen and further develop the faculty's profile in the field of experimental physics. The successful candidate's research activities should be in the field of magnetism and primarily serve to investigate magnetocaloric materials, permanent magnets and possibly molecule-based hybrid systems. Their research work should complement the faculty's existing experimental investigations and potentially be linked to the theoretical descriptions it is developing of these magnetic materials. The future post holder will be required to play a central role in the Collaborative Research Centre/Transregio 270 'HoMMage: Hysteresis Design of Magnetic Materials for Efficient Energy Conversion'. The willingness to engage in interdisciplinary cooperation within the framework of other existing research programmes such as SFB 1242, SFB/TRR 247 and IRTG 2D-MATURE is expressly welcomed. The existing research infrastructure at UDE, such as CENIDE and ICAN, can also be utilised for this purpose.

We expect applicants to have published papers in leading peer-reviewed venues and have experience in conducting projects for which they have acquired external funding from competitive schemes themselves, preferably projects funded by the German Research Foundation (DFG) or equivalent, as appropriate to the advertised position. A willingness to cooperate with other groups is required. The successful candidate will be expected to initiate future coordinated research projects at UDE.

The successful candidate should represent the field of physics in research and teaching and participate in the teaching activities of the faculty to the usual extent. The University of Duisburg-Essen places particular emphasis on teaching quality. Candidates must outline their didactic approach, also taking the profile of the University of Duisburg-Essen into consideration.

Desirable qualifications include leadership skills and diversity competence as well as experience in academic self-governance in line with the applicant's academic career stage and the willingness to make a corresponding commitment to the University.

5. Legal framework

Universities are state-funded bodies under public law with legal capacity. State funding is based on the university's tasks, the obligations agreed upon in university contracts and the university's performance. They have a global budget and are not subject to individual instructions from the Ministry for Culture and Science of the state of North Rhine-Westphalia.

If the legal requirements are met, professors are appointed as permanent civil servants as a rule. Professors can also be appointed on the basis of an employment contract under private law.

When awarding a junior professorship, it is to be noted that individuals who already meet the hiring requirements for a university professorship due to having completed a habilitation or another reason cannot be considered.

Further information (in German):

- Contacts
www.uni-due.de/verwaltung/organisation/peo_professoren.php
- Regulations on the appointment proceedings
www.uni-due.de/imperia/md/content/zentralverwaltung/bereinigte_sammlung/2-10-mai12.pdf
- Information on the appointment and hiring process
www.uni-due.de/verwaltung/berufungsmanagement/

6. Salary

The salary of university teaching staff is stipulated by the North Rhine-Westphalian system for the remuneration of civil servants. These staff members fall under the W salary range, which contains the bands W1, W2 and W3.

Basic salaries can be supplemented with (performance) bonuses in bands W2 and W3. These performance-based salary components can be awarded

- as a result of appointment and retention negotiations (appointment and retention bonuses),
- for special achievements in research, teaching, art, further education and supporting early career researchers (special achievement bonuses),
- for assuming functional or special responsibilities as part of the University's self-governance or University management (functional bonuses).

In certain circumstances, so-called teaching and research bonuses may be paid from private third-party funds.

During appointment and retention negotiations, performance bonuses can also be agreed for a fixed period of time if they are linked to target and performance agreements.

Appointment bonuses are to be negotiated on an individual basis with the Rector of the University of Duisburg-Essen as part of appointment negotiations.

Please find a table showing the current remuneration (in North Rhine-Westphalia) for the salary bands W1, W2 and W3 at:

- https://www.finanzverwaltung.nrw.de/sites/default/files/asset/document/grundgehaelter_a_b_r_und_w.pdf

You can find information on the W salary range (in North Rhine-Westphalia) and the legal foundations for it on the following webpages:

- www.uni-due.de/verwaltung/organisation/peo_links.php
- <https://www.research-in-germany.org/en/jobs-and-careers/info-for-senior-researchers/career-paths/professorship/professor-university.html>

Further information (in German) can be found in the regulations on awarding performance-related bonuses:

- www.uni-due.de/imperia/md/content/zentralverwaltung/bereinigte_sammlung/3_60.pdf