UNIVERSITÄT DUISBURG ESSEN

Offen im Denken

Information for applicants for the professorship in “Optical Quantum Systems”

at the Faculty of Engineering

Closing date for applications: 16 February 2026

Table of contents

1. The University of Duisburg-Essen (UDE)

   UDE as an employer

2. Faculty Engineering

3. Department of Electrical Engineering and Information Technology

4. Information about the position

5. Legal framework

6. Salary

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/image_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 Engineering

ALL ENGINEERING DISCIPLINES UNDER ONE ROOF.

The Faculty of Engineering Sciences at the University of Duisburg-Essen provides a unique profile. Nowhere else in Germany are engineering sciences so close as at the University of Duisburg-Essen. Three departments teach and conduct research under one roof: Civil Engineering, Electrical Engineering and Information Technology and Mechanical and Process Engineering, including Industrial Engineering. Furthermore, the interdepartmental Mobility Transformation Institute (MOTION) was established, in which research and teaching in the field of mobility, automotive engineering and automotive economics is currently carried out by chairs from all departments. As a result, the faculty has an integrated spectrum of engineering disciplines that is unique in Germany and meets all requirements for modern, innovative, and interdisciplinary university education and research in the field of engineering sciences.

With more than 7.300 students – about 44 % of them from other countries – the faculty is a strong partner for the regional and cross-regional industry. Graduates of our study programmes enjoy a high reputation due to their broad professional competence as well as due to the special interdisciplinary and international orientation of our study programmes. Classical study courses such as mechanical engineering, electrical engineering, metallurgy and metal forming, and civil engineering are complemented by modern interdisciplinary study courses such as nanoengineering, medical engineering or industrial engineering. In addition, social skills are addressed that are particularly trained through teamwork and interaction with international students. Our integrated international bachelor's and master's degree programme "International Studies in Engineering (ISE)" with 50 % English lectures is attractive due to its global character and versatility not only for international students but also for German speaking students.

We have developed a sustainable support system for our first-year students that ensures a seamless transition from school to university education. They have the opportunity to learn the contents of their studies in small groups within the first three semesters, enabling them to quickly complete the demanding engineering study at a high level. In addition, there are intensive laboratory experiments that convey how to use the technologies of the future right from the start.

With an investment volume of more than 60 million Euro for equipment infrastructure, the Faculty of Engineering has excellent opportunities to develop cutting-edge technologies and conduct basic research. With six concluded and four running DFG-Collaborative Research Centers, three running DFG-Research Training Groups as well as six DFG funded Research Units the faculty is the best address in Germany and the international science community for research in the fields of nanotechnology and material sciences. Beside of that the topics

- Energy and Environmental Process Engineering
- Nanotechnology,
- Combustion Science,
- Mechatronics,
- Automotive Engineering and Management,
- Communication Systems,
- Microelectronics and Medical Technology,
- Information Technology,
- Product Engineering and Materials Technology,

- Civil Engineering,
- Industrial Engineering,
- Logistics

are the focus of research activities.

By focusing on these areas, the faculty has achieved a high international reputation, which is documented by numerous research projects. In addition, there are the affiliated institutes and other associated institutes

- Development Centre for Ship Technology and Transport Systems (DST),
- Institute for Mobile and Satellite Communication (IMST),
- Institute for Energy and Environmental Technology (IUTA),
- IWW Water Center (IWW),
- Center for Fuel Cell Technology (ZBT),
- Fraunhofer Institute for Microelectronic Circuits and Systems (Fraunhofer IMS),
- Gas- und Wärme-Institut (GWI),
- Center of Rotating Equipment (CoRE),

which collaborate closely with the faculty and have an annual total revenue of more than 35 million Euro. The faculty and the affiliated and associated institutes have proven to be excellent partners for complex technological solutions and for the recruitment of excellently trained engineers.

To promote cooperation between the departments and institutes and to increase visibility the faculty has established three research profiles, which are “Tailored Materials”, “Human-Centered Cyber-Physical Systems” and “Energy and Resource Engineering”.

3. Department of Electrical Engineering and Information Technology

From classic electrical engineering to nanoengineering to medical technology

More than 1,400 students are currently enrolled in degree programmes of the department of Electrical Engineering and Information Technology. The attractive range of subjects covers the "classical" topics of electrical engineering and information technology, enables interdisciplinary studies in "NanoEngineering" and "Medical Technology" and offers the international study programme "International Studies in Engineering". With the complete conversion to consecutive bachelor's and master's degrees, the department is ideally equipped for the future in teaching and promoting young researchers. The fact that the department's offerings are also attractive for women is demonstrated by the above-average proportion of female students, currently above 24%, and in the bachelor's degree course in Medical Technology, which has recently started, it is over 50%. Contrary to general trends, student numbers are rising again in the current winter semester, not least due to active advertising.

The work in the Department of Electrical Engineering and Information Technology is shared by 25 professors in 13 chairs – highly motivated scientists, most of whom have been appointed during the last 5 years; the average age is correspondingly low. Solidly financed and excellently equipped, the department covers all aspects of electrical engineering and information technology, from power engineering to communications technology, microelectronics, medical technology to nanotechnology.

The acquisition of a Collaborative Research Centre in Terahertz Technologies (SFB/TRR 196, MARIE) and an international research training group 2D-MATURE on 2D materials, the participation in further Collaborative Research Centres and a Research Training Group, numerous DFG and EU projects as well as various industrial co-operations demonstrate the extensive research activities in the department. This is made possible by outstanding facilities such as the Center for Semiconductor Technology and Optoelectronics (almost 500 m^2 clean room), the high-voltage laboratory and the fire detection laboratory.

The connection to non-university research institutions, such as the Fraunhofer Institute for Microelectronic Circuits and Systems or the internationally renowned Institute for Mobile and Satellite Communication, is particularly noteworthy. Here, a vivid exchange of knowledge regarding projects, bachelor and master theses as well as through the lecturers from these institutes can be found. The head of the Fraunhofer Institute and three of his managers hold professorships at the university. An intensive cooperation with Jülich Research Centre (FZ Jülich) has been established by two joint professorships.

The Department of Electrical Engineering and Information Technology at the University of Duisburg-Essen is ideally prepared for the increasing competition among universities regarding qualified education of students as well as for future cooperation with national and international partners from science and industry.

4. Information about the open position

The following position is to be filled within the Department of Electrical Engineering and Information Technology, Faculty of Engineering at the University of Duisburg- Essen:

Junior professorship for “Optical Quantum Systems”

(Level W 1 LBesO W – with tenure track to W 3)

We are looking for an internationally renowned, outstanding candidate to establish a research program in the field of optical quantum systems with application focus. The application focus should be on at least one, preferably several, of the following areas:

- Novel materials and technologies for optical quantum systems, preferably solid-state-based
- Components (quantum emitters, quantum repeaters, quantum detectors) for quantum-based transmission technology
- Quantum-based transmission technology systems
- Components and/or systems for quantum sensor technology with applications in areas such as medical technology or imaging

Links to the Fraunhofer Institute for Microelectronic Circuits and Systems (www.ims.fraunhofer.de), the Centre for Semiconductor Technology and Optoelectronics (www.uni-due.de/zho), and/or the Centre for Nanointegration Duisburg-Essen (www.cenide.de) are desirable. In teaching, it is expected that courses will be offered in the degree programs of the Department of Electrical Engineering and Information Technology in the field of quantum technologies (e.g., photonic quantum systems, quantum components, etc.). In addition to lectures and seminars, the course offerings should also include practice-oriented formats such as student projects. Collaboration in the further development of the degree programs is a prerequisite.

Cited publications in peer-reviewed scientific and relevant journals are expected. Experience in the competitively acquisition implementation of self-designed or managed research projects, preferably DFG, BMBF or EU-funded, or internationally comparable projects, as well as relevant experience abroad and patents are desirable.

The University of Duisburg-Essen attaches particular importance to the quality of teaching. Didactic ideas on teaching – also considering the profile of the University of Duisburg-Essen – must be presented. A willingness to participate in academic self-administration is a prerequisite.

Criteria for appointment are based on Section 36 of the NRW Higher Education Act (HG).

The teaching obligation is currently four teaching hours in the first and five in the second employment phase of the junior professorship. The appointment is made as a temporary civil servant if the requirements under civil service law are met. The duration of employment is governed by § 39 (5) of the NRW Higher Education Act.

The University of Duisburg-Essen strives to promote the diversity of its members (www.uni-due.de/diversity/en/). The University also aims to increase the ratio of women in its academic staff and therefore strongly encourages women with relevant qualifications to apply. If two candidates are equally qualified, women will be given preference as stipulated in the Equal Opportunities Act of North Rhine-Westphalia (LGG NRW). Applications from qualified candidates with disabilities or equivalent status as defined in Section 2 (3) of Book IX of the German Social Code (SGB IX) are encouraged.

Applications with the usual documents (CV with information on the scientific and professional career, list of scientific publications, PDF files of the three most important publications, copies of certificates, a short description of the own research profile and the resulting perspectives at the University of Duisburg-Essen, teaching and learning concept, information on previous teaching activities, on participation in academic self-administration as well as on acquired third-party funds) are to be submitted by post or in electronic form no later than 17 January 2026 to the Dean of the Faculty of Engineering at the University of Duisburg-Essen, Univ.-Prof. Dr.-Ing. Alexander Malkwitz, Forsthausweg 2, 47057 Duisburg, dekanat@iw.uni-due.de.

Please find further information on the position, its integration into the University of Duisburg-Essen and the Faculty of Engineering at: www.uni-due.de/iw/en/jobs

If you have any questions regarding this vacancy, please contact the Vice Dean of the Department of Electrical Engineering and Information Technology, Prof. Roland Schmechel, roland.schmechel@uni-due.de, www.uni-due.de/eit/en

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