

UNIVERSITY DUISBURG-ESSEN:

Information for Applicants
for the
W3 Professorship

**“Scattering of x-rays / electrons at
interfaces in time domain applications”**

in the Faculty of Physics

I.	The University Duisburg-Essen	3
II.	The Faculty of Physics	4
III.	The Center for Nanointegration Duisburg-Essen (CENIDE)	5
IV.	The Cluster of Excellence RESOLV	6
V.	Requirements for the Position	6
	1. Research	
	2. Teaching	
	3. Further Requirements	
	4. Hourly Extent of the Professional Activities	
VI.	Staffing and Facilities	7
	1. Staffing	
	2. Facilities	
	3. Funding	
VII.	Legal Framework	7
VIII.	Salary	7

I. The University Duisburg-Essen

BROAD BASE, STRONG PEAKS.

WE ARE ONE OF THE YOUNGEST UNIVERSITIES IN GERMANY AND THINK IN TERMS OF UNLIMITED POSSIBILITIES INSTEAD OF POSSIBLE LIMITATIONS.

LOCATED IN THE HEART OF THE RUHR METROPOLIS, WE HAVE 11 FACULTIES WORKING TO DEVELOP IDEAS WITH A FUTURE.

WE ARE STRONG ON RESEARCH AND TEACHING, EMBRACE DIVERSITY, PROMOTE ACADEMIC POTENTIAL AND FIGHT FOR GENUINE EDUCATIONAL EQUALITY.

University of Duisburg-Essen

Located in the heart of the Ruhr metropolis, the University of Duisburg-Essen (UDE) is one of the youngest and largest universities in Germany. The courses range from the humanities and social sciences over economics and business studies all the way to the engineering sciences and natural sciences (including medicine). It's also well known in the international scientific community.

Top positions

This is reflected by the top positions the UDE has recently achieved in international rankings. In a global comparison of the performance of the best universities founded since the turn of the millennium, the UDE came in third. In the Times Higher Education Ranking, it holds down 19th place among the best 150 universities worldwide younger than 50 years old.

Main research areas

The research carried out at the UDE covers a broad spectrum including four cross-departmental main research areas: nanosciences, biomedical sciences, urban systems and transformation of contemporary societies. More than 43,000 students from over 130 countries are enrolled at the UDE in a total of over 230 courses of study. An important objective of the UDE's diversity management program is to offer equal opportunities to young people from non-academic backgrounds.

Partnerships & coalitions

As an academic global player, the UDE cultivates partnerships with more than 100 universities all over the world. It is a member of the University Alliance Ruhr (UA Ruhr), a strategic coalition formed by the three universities in the Ruhr area. The UA Ruhr operates liaison offices in North America, Russia, and Latin America.

Learn more:

https://www.uni-due.de/imperia/md/content/dokumente/ppt/ppt_praesentation_ude_en.pdf



II. The Faculty of Physics

The [Faculty of Physics](#) comprises the areas “experimental physics”, “theoretical physics” and “didactic of physics”. All research groups are located on the Campus Duisburg except for didactic which takes place at the Campus Essen like all teacher training programs. Currently, 22 professors work at the faculty, twelve of which are assigned to experimental physics, eight to theoretical physics and two to didactic of physics. Approx. 50 staff positions are available for research assistants. That makes the Faculty of Physics in Duisburg-Essen one of the major physics departments in Germany.

Research

The Faculty of Physics has created key research areas, which make it possible to remain attractive and competitive in the international university market. One of the characteristics of the Faculty is the participation in larger research cooperations, making significant contributions to the key profile areas “nanoscience” and “urban systems” of the University Duisburg-Essen in the process.

In experimental physics, a traditional key area is condensed matter. In this regard, the Faculty of Physics is one of the strongest throughout Germany and covers a wide spectrum of current topics of solid state physics. The research activities primarily deal with the areas of magnetics, physics of surfaces and interfaces, the physics of ultrafast phenomena and the physics of nanostructures. The research profile is supplemented by the field of planetary research and granular matter, which is linked with the other experimental groups in the work area of nanoparticles and their reciprocal effects.

One focus of theoretical physics at the UDE is the area of statistical and mathematical physics. A special feature in Duisburg is the fact that the exploration of socio-economic systems with the means of statistical physics is heavily represented (physics of traffic and economics). The second focus is on computational physics and solid-state theory. It plays a significant role within the solid state and material oriented research cooperations shaping the profile of the faculty.

A key area of the didactic of physics is empirical didactic research, which focuses on the foundation and development of teaching and learning processes in all life stages.

Many research groups at the Faculty are members of the Center for Nanointegration Duisburg-Essen ([CENIDE](#)) as well as of the NanoEnergieTechnikZentrum ([NETZ](#)).

Third party funding

The faculty is known for larger DFG-supported research cooperations. After successful completion of the Collaborative Research Centers (CRCs) SFB-TRR 12, SFB 445, SFB 491 and SFB 616, the Faculty now supports [SFB 1242](#) “Non-equilibrium Dynamics of Condensed Matter in the Time Domain”, set up in 2016. Since January 2020 it is one of two locations of the [SFB-TRR 270](#) “Hysteresis design of magnetic materials for efficient energy conversion: HoMMage”. The Faculty is also involved in SFB 876, SFB-TRR 80 and SFB-TRR 247 as well as in numerous DFG priority programs and research units. This is complemented by participation in the Cluster of Excellence [RESOLV](#), in EU, BMBF and BMWi projects, some of which are coordinated by members of the faculty, and many individual projects whose supporters include DFG, Volkswagen Foundation and Stiftung Mercator.

Teaching

In addition to the professional courses and teacher training courses in physics (Bachelor and Master), the Faculty of Physics offers an interdisciplinary Bachelor/Master program Energy Science with a vocation field orientation, which includes an obligatory year abroad. There is also the Bachelor/Master program in NanoEngineering, offered in cooperation with Engineering Sciences, as well as supporting lectures for programs in chemistry, medicine, biology and several engineering subjects.

More than 1000 students and 80 doctoral candidates in physics are currently enrolled.

Public Outreach

The Faculty of Physics undertakes special efforts for young people to be inspired by physics and increase the number of (especially female) students. Special highlights:

- Trial studies (from 12th grade), every Saturday during the semester;
- Annual school competition “freestyle-physics” with more than 2000 participants;
- Evonik School Laboratory;
- Participation in the nationwide summer university program for women in sciences and technology as well as in the
- Girls' Day every year.

III. The Center for Nanointegration Duisburg-Essen CENIDE

The Center for Nanointegration Duisburg-Essen, or CENIDE for short, is a central scientific institute and main research area of the University of Duisburg-Essen (UDE). Assembled under one roof are all the UDE physicists, chemists, engineers, and physicians engaged in nanotechnology. More than 60 working groups led by acknowledged experts in their field collaborate with one another and with external partners on current research projects. Part of CENIDE is the research building NETZ (NanoEnergieTechnikZentrum) where physicists, chemists and engineers research new materials for energy applications and develop scalable processes for their production and processing. Further information can be found on https://www.uni-due.de/cenide/index_en.php.



IV. The Cluster of Excellence RESOLV

RESOLV (Ruhr Explores Solvation) is a world-leading interdisciplinary research institution in Solvation Science awarded as a Cluster of Excellence by the German Excellence Strategy. Within RESOLV, scientists from six institutions in the Ruhr area covering experimental chemistry, theory and chemical engineering investigate how solvents are involved in the control, mediation and regulation of chemical reactions and processes. RESOLV's mission stretches from fundamental research to the translation into applications, including chemical energy conversion and heterogeneous catalysis. Further information can be found here: <https://www.solvation.de/>

V. Requirements for the Position

1. Research

We seek a colleague with a focus on innovative techniques employing ultrashort x-ray photon and / or high energy electron pulses in scattering, imaging, or spectroscopy experiments in the time domain. With an experimental program performed in house and at user facilities, the prospective colleague should offer a clearly defined perspective to address scientific questions involving dynamical processes at the liquid/solid, liquid/2D material or liquid/complex heterostructure interfaces. Close collaboration with the Collaborative Research Center 1242 and the RESOLV Cluster of Excellence is expected. Since we would strongly welcome initiatives for future collaborative research projects at the UDE, the research area of the successful candidate should offer opportunities for collaborations with other experimental and theoretical groups at the faculty.

2. Teaching

The University of Duisburg-Essen places great emphasis on excellence in teaching and graduate education. The holder of the position will represent the subject of physics in teaching and participate in the teaching activities of the faculty to the usual extent. Courses are offered for the programs Physics, Energy Science, NanoEngineering and for teacher training courses. Supporting courses for other faculties of the UDE are also on offer. The courses and lectures are conjointly reassigned for each semester. Furthermore, participation in outreach activities such as "freestyle-physics", school laboratories and trial study programs is welcome.

3. Further requirements

Applicants should demonstrate a vibrant research portfolio through publications in international peer-reviewed journals and extensive experience with acquisition and management of competitive third-party projects.

4. Hourly Extent of the Professional Activities

The advertised professorship is a full-time position. The teaching load is specified by the teaching requirement directive of the state of North Rhine Westphalia and includes 9 teaching hours.

Fair participation in academic self-administration is expected.

VI. Staffing and Facilities

1. Staffing

It is planned to assign a permanent budget for several research assistants (full-time) and technicians as well as for an administrative assistant (50%) to the professorship. Details will be discussed and coordinated during the appointment process.

2. Facilities

Office facilities and laboratory space in the immediate vicinity of the other research groups of the Faculty of Physics will be provided on the Campus Duisburg. Details will be discussed and coordinated during the appointment process.

3. Funding

The holder of the position will receive a suitable share of the available operating budget of the Faculty of Physics. This budget is annually assigned to the faculty by the university. There is no entitlement to such funds from the budget.

VII. Legal Framework

With the passing of the Higher Education in North-Westphalia Act (German abbreviation: HG) dated 16.09.2014, the university system was restructured as of 1 October 2014.

Operating under German law, the universities are defined legally as public corporations supported by the State of North Rhine-Westphalia. State funding is based on the tasks of the universities, agreed goals and performances delivered. They have a global budget and are not subject to the instructions of the North Rhine-Westphalian Ministry of Innovation, Science, Research and Technology.

Legal Status of the Academic Staff

Assuming legal prerequisites are met, professors in Germany are usually employed unlimited on a civil-servant basis (= full tenure). However, employment on the basis of a contract under private law is also possible.

For further information (laws, directives etc.), please visit https://www.uni-due.de/verwaltung/organisation/peo_professoren.php (in German).

VIII. Salary

The W salary scale provides a system of basic salaries (W1, W2, W3) for professors in Germany.

Provision is also made for performance-related salary components — “performance bonuses”. These can be allocated on different grounds: as the result of appointment and tenure negotiations (“appointment and tenure bonuses”), for special achievements in research, teaching, art, continuing education and next-generation staff development (“special performance bonuses”) and for carrying out functional or special responsibilities within the framework of university self-management or university administration (“functional performance bonuses”). Furthermore,

under certain circumstances, research and teaching allowances may be paid from third-party funds.

Within the framework of appointment negotiations, any performance bonuses are to be negotiated on an individual basis with the rector of the University of Duisburg-Essen.

The currently effective salaries can be found at:

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

More information, both general and legal, about the W salary scale can be found at:

https://www.uni-due.de/verwaltung/organisation/peo_links.php (in German)

<http://www.hochschulverband.de/cms1/w-besoldung.html> (in German)