

We are a young, innovative University in the heart of the Ruhr Metropolitan Region. Excellent in both research and teaching, we are open-minded and develop sustainable ideas for the future. We stand for diversity, promote individuals' capabilities, and are committed to educational justice that deserves the name.

Applications are invited for

**2 Research Assistant (PhD) positions (m/f/d) Two-Phase Flow at the Chair of Turbomachinery
(Salary 13 TV-L, Full-time 100 %)**

at the University of Duisburg-Essen (UDE) Campus Duisburg, Faculty of Engineering

The Chair of Turbomachinery at the UDE is a competent partner for application-oriented research and development in the field of turbomachinery throughout Europe. Our focus is on compressors, pumps, turbines and expanders. Experimental and numerical methods are used in the four main research areas of *Phase Transition of Fluids in Flows*, *Turbomachines for Alternative Fluids and Circuits*, *Fluid Dynamics and Structural Dynamics of Machine Components* and *Optimization of Flow Paths*. A key competence is the development of numerical methods for calculating the 2D and 3D flow of real and two-phase flows, as well as the measurement of the flow in stationary and rotating systems.

Your tasks

- Development and application of numerical methods for two-phase flows of real gases in turbomachinery
- Implementation, validation and continuous optimisation of these methods in existing simulation tools
- Writing and submitting research articles to scientific journals and presenting the results at international conferences
- Processing and acquisition of research projects and supervision of Bachelor's and Master's theses

Your profile

- A master's degree in engineering covering the topics thermodynamics, fluid mechanics and turbomachinery is required
- Applicants should be able to demonstrate a keen interest in aspects of turbomachinery and their role in the modern world
- An independent, proactive and creative way of working and the ability to present results at international meetings and conferences are required
- Strong interest in doing a doctorate

We offer

- A research-intensive environment with a great deal of creative freedom
- A respectful and open-minded working environment
- Comprehensive support for your doctorate and access to a wide range of training opportunities
- Significant flexibility will be given to the successful candidate to develop the doctorate
- Family friendliness through childcare and counselling for your care responsibilities
- A wide range of further and advanced training programs, individual induction training
- Excellent public transport connections and free parking on site
- Attractive sports and health programs
- The possibility of partial mobile working

Starting date 01.01.2026

Duration of contract 3 years

Working hours 100 % of a full-time position (part-time employment is possible)

Application deadline 2025-09-15

Applications for this position should be submitted to s.schuster@uni-due.de, referring to job number **454-25**. Please address questions regarding the position, your tasks, etc., to Dr.-Ing. Sebastian Schuster, Faculty of Engineering, Telephone +49 203 379 3531, E-Mail s.schuster@uni-due.de.

Information about the faculty and Chair of Turbomachinery can be found at:
<http://www.uni-due.de/tm>

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

It aims to increase the proportion of women among academic staff and therefore strongly encourages women with relevant qualifications to apply. In accordance with the State Equal Opportunities Act, women with equal qualifications are given preferential consideration. Applications from suitable severely disabled persons and persons of equal status within the meaning of § 2 Para. 3 SGB IX are welcome.

