

The **department of Physics** at the University of Augsburg has an open position in the group of Prof. Dr. Nadine Schwierz starting from October 1st, 2026 as

Postdoctoral Researcher (m/f/d)

Machine learning for the modeling and simulation of charged biomolecular systems

with salary 100% TV-L E13 fixed-term contract for up to 2 years

We are seeking a highly motivated Postdoctoral Researcher to join our group working at the interface of molecular simulations, statistical physics, and machine learning. The project focuses on the modeling and simulation of charged biomolecular systems, with particular emphasis on ions and ionizable lipids. The successful candidate will develop and apply classical molecular dynamics simulations, machine-learned interatomic potentials, and machine learning methods to describe complex soft-matter and biomolecular systems. A central goal of the project is to establish quantitative connections between simulations and experimental data, including ion-specific measurements, cryo-EM, and scattering experiments.

Areas of responsibility:

- Perform classical molecular dynamics simulations of charged biomolecular systems
- Develop machine-learned interatomic potentials for ions and ionizable lipid systems
- Design and implement machine learning algorithms for molecular modeling
- Integrate simulation results with experimental data
- Collaborate with experimental partners and contribute to interdisciplinary research
- Teaching exercises in Physics/Biophysics.

What we offer:

- Excellent and interdisciplinary research activities in biomolecular simulations
- Close collaborations with leading experimental groups
- Outstanding, collaborative, and integrated environment of the greater Munich area
- Access to state-of-the-art supercomputing facilities

Job requirements:

- MSc degree in Physics, Biophysics, Biochemistry or a closely related discipline
- PhD in computational/theoretical physics, biophysics, or a closely related discipline
- Experience with molecular dynamics simulations of biomolecular systems and high-performance computing
- Solid background in theoretical and computational biophysics and statistical mechanics
- Demonstrated programming ability, including coursework and practical experience in scientific software development (preferentially Python)
- Background in machine learning, including relevant coursework or practical experience with machine learning applications is highly desirable
- Strong motivation to contribute to interdisciplinary collaborations and publish research in leading scientific journals
- Excellent written and spoken English communication skills

The University of Augsburg is an equal opportunity employer and particularly encourages female applicants. The University also tries to increase the proportion of scientists with physical disabilities. Respective applications are welcome.

Please send your application including CV, cover letter, name of at least two referees in electronic form to Prof. Dr. Nadine Schwierz

E-Mail: Nadine.Schwierz@physik.uni-augsburg.de

<https://www.uni-augsburg.de/de/fakultaet/mntf/physik/groups/cbio/research/>