UNIVERSITY OF COLOGNE



Foto: Jörn Henn

Faculty of Mathematics and Natural Sciences

Doctoral Position – Ultrafast Quasiparticle Dynamics and Hybrid Collective Modes in Altermagnets (f/m/x)

We are one of the largest and oldest universities in Europe and one of the most important employers in our region. Our broad range of subjects, the dynamic development of our main research areas and our central location in Cologne make us attractive for students and researchers from around the world. We offer a wide range of career opportunities in science, technology, and administration.

The position is in the Optical Condensed Matter Science group at the University of Cologne. You will carry out your doctoral project within DFG Project No. 581449332 of the Priority Programme, Unconventional Magnetism: Beyond the S-Wave Magnetism Paradigm' (SPP 2558). The preferred start is as soon as possible.

YOUR TASKS

- Carry out the experimental work for your doctoral thesis on altermagnets
- Learn and apply time-resolved optical, magneto-optical and Raman spectroscopy at low temperatures and in magnetic fields
- Optically characterize altermagnetic bulk crystals and thin-layer samples
- Analyse and model the transient optical response of quasiparticles and collective modes
- Present your results at SPP 2558 meetings and international conferences, and publish them in peer-reviewed journals
- Take part in the teaching activities of the institute (approx. 5% of working time)

YOUR PROFILE

- Master's degree (or equivalent) in Physics, Materials Science or a related field
- Strong interest in experimental condensed matter physics and ultrafast optics
- Laboratory experience in optics, lasers or spectroscopy (e.g. from a Master's thesis) is an advantage
- Experience with cryogenics, magnetic fields or programming (e.g. Python, MATLAB, LabVIEW) is welcome
- Good written and spoken English and the ability to work in a team

WE OFFER

- The opportunity to earn a doctorate
- A diverse working environment with equal opportunities
- Support in balancing work and family life
- Flexible working time models
- Extensive advanced training opportunities
- Occupational health management offers

The University of Cologne promotes equal opportunities and diversity. Women will be considered preferentially in accordance with the Equal Opportunities Act of North Rhine-Westphalia (Landesgleichstellungsgesetz – LGG NRW). We also expressly welcome applications from all suitable candidates regardless of their gender, nationality, ethnic and social origin, religion, disability, age, sexual orientation and identity.

The position is available from 15 January 2027 on a part time basis with 29,87 hours per week. The position is to be filled for a fixed term until 14 January 2030. If the applicant meets the relevant wage requirements and has the appropriate personal qualifications, the salary is based on remuneration group 13 TV-L of the pay scale for the German public sector.

Please apply online with proof of the required qualifications (without a photo) under https://jobportal.uni-koeln.de. The reference number is Wiss2611-13. The application deadline is 7 December 2026.

For further inquiries, please contact hedayat@ph2uni-koeln.de or pvl@ph2.uni-koeln.de and take a look at our FAQs.

HR EXCELLENCE IN RESEARCH