



Postdoc position in low-temperature STM on single-metal-atom chains within 2D materials (f/m/x)

Junior group Jolie | SMACs

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 research will be conducted within the context of DFG-funded project "Single-metal-atom chains as one-dimensional half-metals and magnets", which is an experimental-theoretical collaboration between the University of Cologne (Jolie) and the Research Center Rossendorf (Krashennikov). The Jolie group in Cologne is equipped with excellent research facilities and is linked to the DFG-funded CRC1238 and the Priority Program 2244 on 2D materials.

YOUR TASKS

- » Growth of 2D materials and heterostructures by molecular beam epitaxy
- » Growth of single-metal-atom chains (SMACs) within 2D semiconductors
- » Scanning tunneling microscopy (STM) and spectroscopy (STS) in ultra-high vacuum at low temperatures and under external magnetic field
- » Exploration of electronic and magnetic properties of the systems under investigation
- » Analysis, publication and presentation of the results at national and international conferences

YOUR PROFILE

- » Excellent academic record
- » A doctoral degree in physics or a related discipline
- » Previous experience with molecular beam epitaxy growth and low-temperature scanning tunneling microscopy and spectroscopy
- » Good teamwork skills, English proficiency
- » Research experience and publications in peer-reviewed journals

WE OFFER

- » An exciting research project in a deeply integrated group with experience in surface science
- » 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 1 July 2025 on a full-time basis (39,83 hours per week). The position is to be filled for a fixed term until 30 June 2027 with the possibility of an extension. If the applicant meets the relevant wage requirements and personal qualifications, the salary will be 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 and without a photo under: <https://jobportal.uni-koeln.de>. The reference number is Wiss2503-04. The application deadline is 13 April 2025.

For further inquiries, please contact Dr Wouter Jolie (wjolie@ph2.uni-koeln.de) and take a look at our [FAQs](#).

