



Shaping change: this is what drives us at Forschungszentrum Jülich. As a member of the Helmholtz Association with some 7,600 employees, we conduct interdisciplinary research into a digitalized society, a climate-friendly energy system, and a sustainable economy. We focus on the natural, life, and engineering sciences in the fields of information, energy, and bioeconomy. We combine this with expertise in high-performance computing and artificial intelligence using unique scientific infrastructures.

Oxide electronics are a major opportunity for future information technologies and a sustainable energy economy. In the group for 'Growth and in-situ characterization of oxide thin films & devices' at Peter Grünberg Institute - Electronic Materials (PGI-7), we are exploring the fundamental properties of nanoscaled oxides in functional memristive devices. The fabrication of novel geometry memristor and the in-situ high-resolution characterization in operando allow us to explore programming of memristors in real neuromorphic hardware programming.

We are looking to recruit a

Master Thesis in Physics or Materials Science - Memristor device fabrication and operando AFM characterization

Your Job:

- Fabricate memristors with Helmholtz Nano Facility (HNF) using E-beam lithography
- Sputter sub-stoichiometry oxides thin films to complete the lateral memristor
- Electrically operate and program the memristors
- Operando characterizing the device electrically and morphologically using conductive atomic force microscopy (C-AFM)
- Access and active control of advanced experimental setups

Your Profile:

- Completed qualification to enroll for the Master thesis in Physics or Materials Sciences, with a good track record
- Willingness to familiarise yourself with new methods or new scientific challenges
- Interest in issues about nanoelectronics and surface science
- Previous knowledge in lithography, surface characterization, or electrical characterization is desirable
- High degree of motivation and reliability and analytical working style
- Excellent ability to cooperate and work in a team

The job will be advertised until the position has been successfully filled. You should therefore submit your application as soon as possible. We look forward to receiving your application via our

Online-Recruitment-System!

Questions about the vacancy?

Get in touch with us by using **our contact form**.

Please note that for technical reasons we cannot accept applications via email.

www.fz-juelich.de

- Fluent knowledge of written and spoken English

Our Offer:

We work on highly relevant innovative topics and offer you the possibility to actively shape the change. We support you with:

- **PRACTICAL RELEVANCE:** With us, you will gain valuable practical experience alongside your studies and actively participate in interdisciplinary projects
- **SCIENTIFIC ENVIRONMENT:** You can expect excellent scientific equipment, modern technologies, and qualified support from experienced colleagues. On top, you will receive individual training to learn state-of-the-art lab methodology, comprising electron beam lithography (EBL), oxide sputtering, atomic force microscopy (AFM), and transport measurements.
- **WORK-LIFE BALANCE:** We offer flexible working hours to help you balance your professional and personal life
- **FLEXIBILITY:** Flexible working hours make it easier for you to balance work and study
- **CAMPUS EXPERIENCE:** Our research campus in the countryside creates ideal conditions for collegial exchange and sporting activities right on site. Our cafeteria offers a wide range of options—you can enjoy a relaxing lunch break with a lake view
- **PERSPECTIVE:** If you have the appropriate qualifications and funding is available, the institute offers the opportunity to do your PhD after completing your master's thesis
- **FAIR REMUNERATION:** We will pay you a reasonable remuneration for your thesis

In addition to exciting tasks and a collegial working environment, we offer you much more: <https://go.fzj.de/benefits>

We welcome applications from people with diverse backgrounds, e.g. in terms of age, gender, disability, sexual orientation / identity, and social, ethnic and religious origin. A diverse and inclusive working environment with equal opportunities in which everyone can realize their potential is important to us.

The following links provide further information on diversity and equal opportunities:

<https://go.fzj.de/equality> and on specific support options:

<https://go.fzj.de/womens-job-journey>