



Conducting research for a changing society: This is what drives us at Forschungszentrum Jülich. As a member of the Helmholtz Association, we aim to tackle the grand societal challenges of our time and conduct research into the possibilities of a digitized society, a climate-friendly energy system, and a resource-efficient economy. Work together with around 7,400 employees in one of Europe's biggest research centres and help us to shape change!

The mission of the Institute for Functional Quantum Systems (PGI-13) is to create the technological and scientific basis to enable useful quantum computing. We focus on developing quantum devices, improving their coherence and materials, and implementing quantum gates and algorithms. We use superconducting qubits that operate at temperatures close to absolute zero and are controlled by high-speed signals. A key requirement is to preserve high quality quantum operations as we scale. Overcoming these exciting challenges lies at the interface between scientific research and engineering.

Check out our lab opening: <https://go.fzj.de/LabOpening> and us hosting a summer school: <https://go.fzj.de/SummerSchool>

**We are looking to recruit a**

## **Postdoc - Development of scalable superconducting quantum systems**

### **Your Job:**

This position focuses on developing, operating, and characterizing superconducting quantum devices. Your tasks in detail are:

- Development of novel methods for experimentation, fabrication, and characterization
- Develop gate implementations, benchmarking and algorithms
- Work on the interdisciplinary challenges in systems engineering
- Install and improve experimental setups and fabrication tools
- Supervising and guiding Master and PhD students
- Active participation in project meetings and events
- Presenting and publishing the research on an international stage

### **Your Profile:**

As part of our experimental team, you will regularly work in state-of-the-art laboratories and clean rooms. The role involves working in a cryogenic laboratory environment and following specific clean room protocols.

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](http://www.fz-juelich.de)

- PhD in physics or related with a background in the field of experimental quantum information
- Willingness to work in laboratory and cleanroom environments
- Ideally, initial experience in a technical or scientific environment (e.g. cleanroom, laboratory)
- Deep knowledge of solid state physics and/or quantum information
- Experience with microfabrication and/or operating and calibrating quantum systems
- Experience with hardware interfacing programming in Python
- Team-oriented and highly motivated to work in an experimental laboratory
- A background in quantum computing as well as experience with cryogenics, signal delivery, materials optimization, and microwave control are highly preferred qualifications

Please feel free to apply for the position even if you do not have all the required skills and knowledge. We may be able to teach you missing skills during your induction.

#### **Our Offer:**

We work on the very latest issues that impact our society and are offering you the chance to actively help in shaping the change! We support you in your work with:

- A large research campus with green spaces, offering the best possible means for networking with colleagues and pursuing sports alongside work
- The Forschungszentrum Jülich is one of the largest research centres in Europe with excellent scientific equipment, including the fastest supercomputer in Europe, is located on a green campus, and near the cultural centres of Cologne, Düsseldorf and Bonn
- Comprehensive training courses and individual opportunities for personal and professional further development
- Extensive company health management
- Ideal conditions for balancing work and private life, as well as a family-friendly corporate policy
- Flexible work (location) arrangements, e.g. remote work
- 30 days of annual leave and provision for days off between public holidays and weekends (e.g. between Christmas and New Year)
- Targeted services for international employees, e.g. through our International Advisory Service

In addition to exciting tasks and a collaborative working atmosphere at Jülich, we have a lot more to offer:

<https://go.fzj.de/benefits>

We offer you an exciting and varied role in an international and interdisciplinary working environment. The position is for a fixed term of 2 years, with possible long-term prospects. Salary and social benefits will conform to the provisions of the Collective Agreement for the Public Service (TVöD-Bund), pay group 13-14, depending on the applicant's qualifications and the precise nature of the tasks assigned to them. All information about the Collective Agreement for the Public Service (TVöD-Bund) can be found on the BMI website: <https://go.fzj.de/bmi.tvloed> . The monthly salaries in euros can be found on page 66 of the PDF download.

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.