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 7,250 employees in one of Europe’s biggest research centres and help us to shape change!

The PGI-12 is concerned with the theoretical analysis of quantum computer systems and their applications. It uses a variety of analytical and numerical methods from physics, mathematics and computer science, such as the modelling of open quantum systems, the modelling of solid-state quantum bits, and methods from many-body physics. Here you can find more information about the PGI-12: https://www.fz-juelich.de/en/pgi/pgi-12

We are looking to recruit a

**Postdoc – Control strategies and software for quantum-computing platforms**

**Your Job:**
- Devise control strategies for quantum-computing platforms based on either superconducting devices, nitrogen-vacancies in diamonds, or Rydberg- or neutral-atoms
- Advance our cloud-based optimization software suite by implementing numerical control methods and by incorporating physical domain knowledge with respect to real devices while closely collaborating with experimental partners
- Identify and implement efficient techniques for autonomous and adaptive characterization of a broad variety of quantum devices and pursue novel approaches based on, e.g., reinforcement learning and autonomous real-time measurements

**Your Profile:**
- Master’s degree and PhD in quantum physics
- Strong background in quantum computing platforms based on either superconducting devices, nitrogen-vacancies in diamonds, or Rydberg- or neutral-atoms, or the control of dynamical quantum systems
- Background and interest in developing numerical methods for quantum technology; you enjoy scientific programming and building software systems

We look forward to receiving your application until 03.10.2023 via our [Online-Recruitment-System](mailto:). **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
• Interest in working closely with experimentalists; prior experience of collaborating with experimentalists (or experience in experimental physics) is an advantage
• Effective communication in English; ability to work autonomously, and in close collaboration within a team
• Most importantly: enthusiasm to explore uncharted territory and develop your own ideas

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
• Work in a world-leading group in quantum optimization research as part of a highly motivated, international, and interdisciplinary team
• Deeply collaborate with our team at PGI-8, the institute for quantum control (https://www.fz-juelich.de/en/pgi/pgi-8)
• Be in direct contact with leading experimental groups in quantum computing platforms
• Enhance your expertise on the multiple facets of optimization technologies and experimental quantum-computing platforms; these skills are in high demand both in academia and in high-tech companies: at present, there is significant investment from private and governmental funding agencies in the field of quantum technologies
• Full-time position with the option of slightly reduced working hours and 30 days of annual leave
• Outstanding computing facilities in one of Europe’s largest research establishments
• Information on employment as a postdoctoral fellow at Forschungszentrum Jülich can be found here (http://www.fz-juelich.de/gp/Careers_Docs)
• 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 3 separate postdoctoral positions which are limited to 2 years with the possibility of a longer-term perspective depending on the personal requirements. Salary and social benefits will conform to the provisions of the Collective Agreement for the Public Service (TVöD-Bund), pay group 13, depending on the applicant's qualifications and the precise nature of the tasks assigned to them. Exceptional candidates able to conduct highly independent research can be considered in group 14 as well.

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.