

# PhD positions in Experimental Quantum Computing with Superconducting Circuits

Institut für Optik, Information und Photonik, Erlangen, TV-L E 13, Vollzeit, Befristete Anstellung,  
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## Ihre Aufgaben

We are seeking highly motivated PhD candidates to join a rapidly growing research team, led by Christopher Eichler, which conducts state-of-the-art experimental research in quantum computing, quantum information science and quantum optics with superconducting circuits. As a successful candidate, you will get the unique opportunity to take part in setting up a state-of-the-art quantum-computing laboratory and to perform collaborative research contributing to the grand goal of building universal quantum computers. Based on your interests and skills you will engage with a set of specific research topics chosen from the following areas:

- Design and fabrication of next-generation multi-qubit quantum processors enabling hardware-efficient quantum error correction
- Exploration of Novel circuit QED components enabling fast and high-fidelity gates and measurements
- Development, fabrication and characterization of 3D-integrated multi-chip modules
- Research on elements for quantum communication and modular quantum computing
- Improvements to qubit coherence enabled by new materials, processes, and chip designs
- System integration and (real-time) system control enabled by machine learning
- Tune-up, operation and (algorithmic) benchmarking of quantum computing hardware

Your research will benefit from a stimulating academic environment offered by FAU and will be embedded in a rapidly evolving quantum ecosystem in Bavaria. You will have opportunities to interact with partners and collaborators in academia and industry as part of national and state-level initiatives such as the Munich Quantum Valley.

## Ihr Profil

### Notwendige Qualifikationen:

Your profile and qualification:

- You hold a Master's degree in Physics, Electrical Engineering, Quantum Engineering, Micro- and Nanotechnology, Chemistry, Computer Science, Mechanical Engineering or a related field.
- You have a strong interest in experimental realizations of quantum information processing systems.
- You are dedicated to pursuing a successful career in research, development or education either in academia or in industry.

### Wünschenswerte Qualifikationen:

Ideally, you have experience in one or more of the following areas: quantum information processing e.g. with superconducting circuits, trapped ions, semiconductor quantum dots or color centers, experimental quantum

optics and atomic physics, cavity quantum electrodynamics, micro- and Nano-scale electronic devices and their fabrication (cleanroom, deposition, lithography, etching techniques), mesoscopic solid-state physics, low-temperature physics, operation of dilution refrigerators, microwave electronics, digital electronics, FPGAs, instrumentation, and software development.

## Stellenzusatz

Befristetes Forschungsvorhaben

How to apply:

We look forward to receiving your application documents sent to [quantum-office@fau.de](mailto:quantum-office@fau.de) as a single pdf-file.

Application documents should include

- a motivation letter,
- a curriculum vitae,
- a list of publications,
- certificates and transcripts,

copies of bachelor and master theses (as available),

- contact information of two references.

Please arrange for two reference letters to be sent directly to Christopher Eichler. Applications will be considered immediately and until positions have been filled.

## Interessiert?

Die vollständige Stellenausschreibung sowie alle Infos zum Bewerbungsverfahren finden Sie hier:

