

Internships and Thesis

Quantum information platforms utilizing neutral atoms and ions as qubits currently rise from laboratory experiments to applications. The preparation, manipulation and read-out of these logical units is based on the interaction with laser light, which requires a high degree of control over the applied laser frequency, intensity and polarization, this down to the UV spectrum.

In order to accomplish adjustment-free quantum computing facilities, robust building blocks for laser light transport, distribution, manipulation and analysis are developed by our quantum technologies team at Schäfter + Kirchhoff. We are looking for your engagement in one of the following topics:

Development of a beam distribution system with automated power ratio

- Setup of a beam distribution system consisting of a polarizing beam splitter and a motorized wave plate
- Development of controlling interface (electronics/software, control loop)
- Characterization and performance tests

Stability and performance analysis of an optical micro-bench for quantum computing

- Comparison and optimization of different prototypes of optical micro-benches
- Characterization measurements regarding long term and thermal stability
- Data acquisition and evaluation

Numerical simulation of a Polarization Analyzer

- Full-scale 3D simulation (Matlab, Python, etc.) of the light and polarization propagation through a Polarization Analyzer.
- Fault-tolerance studies and optimization

Please address to:

Schäfter+Kirchhoff GmbH
Dr. Ulrich Oechsner
Kieler Str. 212
22525 Hamburg
bewerbung@sukhamburg.de