The **Quantum Technology research group of the University of Rostock** invites applications for

### Postdocs / PhD students Quantum Sensing

#### The group

The Quantum Technology group (Reinhard lab) seeks to translate cutting edge basic research into novel sensors and discover their applications.

A core tool of the group are diamond quantum sensors for magnetic fields.

We are located in Rostock at the Baltic Sea, one of Germany’s most popular holiday destinations.

More information can be found on our website
https://www.qt.physik.uni-rostock.de/en/

#### Your project

You will spearhead one research effort of our lab, directed either towards development of new sensors or discovery of new applications. This could be work on one of the following topics

- **Magnetic imaging and near-field microscopy.** We operate a scanning probe microscope that can position a sensor in nanometer-scale proximity to samples. You will use this platform to reveal patterns of current in integrated circuits, to map patterns of light at the nanoscale, or to assemble nano-optical devices.

- **Engineering novel spin qubits.** You will design novel spin defects, and assemble them in stacks of two-dimensional materials. You will develop novel laser-based schemes to initialize and read their electron spin.

- **Electric interface to quantum sensors.** We have recently discovered a technique for all-electric readout of solid-state spins, based on cavity-QED techniques in a microwave resonator. You will develop new protocols and hybrid quantum-classical circuits to establish solid state spins as a new electric circuit element. You will employ these circuits as compact magnetic field sensors and apply them to novel applications such as chip-scale magnetic resonance spectrometers or the detection of currents in the brain.

Technically, your work will involve the design and construction of optics and electronics, clean room fabrication and software development, as well as theory and simulation work.

#### Your application

Please contact friedemann@quantum-minigolf.org for more information. Feel free to include your CV, a transcript of grades and a copy of your most recent thesis.

To submit an official application, please refer to our application portal https://jobs.uni-rostock.de/jobposting/31bc7bb748a404e73feaa275d6ef3f7fa3ab9d6e0?ref=homepage