



University of Stuttgart  
Germany



The University of Stuttgart and the Research Center SCoPE offer

## PhD positions

within the new DFG Research Training Group 2642

### “Towards Graduate Experts in Photonic Quantum Technologies”

Starting date: April 1<sup>st</sup> 2021

Applications can be submitted at any time until all positions are filled.

**About the Research Training Group:** Quantum physics has led to a number of applications within the fields of quantum sensing, quantum computing, quantum cryptography, and quantum metrology. For all these applications, researchers worldwide have carried out experiments that demonstrate proof-of-principle implementations. However, only a few of potentially many applications have been developed into commercially available products. The reason is that this endeavor requires the joint effort and knowledge of both physicists and engineers. Specifically, it requires a new type of professionals: The Photonic Quantum Engineer. Therefore, we are establishing an interdisciplinary training program for doctoral researchers at the University of Stuttgart where we train exactly these experts at the interface between quantum experiments in the controlled environment of a lab and real-world photonic quantum technologies. For details, see <https://www.pqe.uni-stuttgart.de>

#### Research topics:

- P1 - Electrical readout of a nitric oxide trace-gas sensor based on Rydberg excitation
- P2 - Sensing of weak non-stationary signals with an integrated magneto-optical quantum sensor
- P3 - 3D-printed microoptics for efficient coupling of quantum components
- P4 - Optimized hetero integration of basic elements on the silicon platform for quantum optics
- P5 – Integrated quantum photonics enhanced by machine-learning tools
- P6 - Single-photon sources based on perovskite quantum dots

**About you:** Applicants should hold a Master degree in physics, engineering, or related disciplines. They should have a preference to work on interdisciplinary and truly innovative research projects in a collaborative environment.

**Application procedure:** Applicants need to submit a written application, including CV, copies of certificates, transcript of records, abstract of their master thesis, motivational letter, and at least one recommendation letter of supervisors in their master program. All applications will be viewed by the Board of the Research Training Group and the hiring principal investigators. Prior to the final decision, each promising applicant will be invited for an interview including a seminar talk, which might take place online, depending on the respective current travel restrictions.

Please send your application as a single unencrypted document by e-mail to: [info@pqe.uni-stuttgart.de](mailto:info@pqe.uni-stuttgart.de)

The University of Stuttgart is an equal opportunity employer. Applications of women are strongly encouraged. Severely challenged persons will be given preference in case of equal qualifications.

The information on the collection of personal data in accordance with Article 13 of the GDPR can be found via the following link: <https://www.uni-stuttgart.de/en/privacy-notice/job-application/>