



PhD Position in the interdisciplinary Research Training Group (RTG) 2642 (“Towards Graduate Experts in Photonic Quantum Technologies”)

P3 - 3D-printed microoptics for efficient coupling of quantum components

to be filled by 1 April 2021 for a contract period of 3 years

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 not only the joint effort and knowledge of both physicists and engineers. Therefore, we are establishing this interdisciplinary training program for doctoral researchers at the University of Stuttgart.

The aim of the project P3 is to develop enabling technologies for novel quantum components, in particular we want to employ two-photon 3D-printing methods to design and fabricate microoptical elements for coupling quantum dots to optical fibers. The project is a cooperation between the 4th Physics Institute and the ITO. The selected two candidates will work on theoretical aspects of the optical design as well as practical printing of the components in the cleanroom and qualification in a lab-set-up.

Expected qualifications

- Excellent master degree in engineering, physics or related disciplines with an emphasis on optics
- Theoretical and practical experience in optical system design and physical optics simulation (waveoptics, electrodynamics), preferred for microoptical systems.
- Knowledge of programming languages (python) and/or Optical Design software (e.g. Zemax)
- Experimental skills
- Experience in micro-optical fabrication techniques and clean-room environment desirable
- Communication and team skills

Remuneration

The remuneration is based on the collective bargaining agreement for the public service TV-L according to remuneration group E13 (100%). The position is limited to 3 years.

Starting Date

1 April 2021

The application deadline ends by 31 January 2021.

The workplace will be in Stuttgart.

Applications (in German or English) including informative documents, a cover letter, signed CV, copies of earned university degrees, and transcripts of individual grades are to be sent in digital form (one pdf document) to

Prof. Dr. Alois Herkommer
info@ito.uni-stuttgart.de

The University of Stuttgart wants to increase the proportion of women in the scientific field. Therefore, women are explicitly asked to apply. Full-time positions are fundamentally divisible. Handicapped applicants will be given preference if equally qualified. The setting is made by the central administration. Information on handling applicant data can be found at <https://www.tik.uni-stuttgart.de/das-tik/stellenangebote/datenschutzerklaerung-bewerbungsverfahren/>