



Paderborn University is a high-performance and internationally oriented university with approximately 20,000 students. Within interdisciplinary teams, we undertake forward-looking research, design innovative teaching concepts and actively transfer knowledge into society. As an important research and cooperation partner, the university also shapes regional development strategies. We offer our more than 2,600 employees in research, teaching, technology and administration a lively, family-friendly, equal opportunity environment, a lean management structure and diverse opportunities.

Join us to invent the future!

The Collaborative Research Center TRR 142 "Tailored Nonlinear Photonics" combines the core expertise of Paderborn University in photonic materials, solid-state technology, quantum optics and theory with that of TU Dortmund University in nonlinear spectroscopy and instrumentation. The main focus is on the tailoring of nonlinear interactions like wave-mixing processes, the control of quantum systems, light emission and propagation and nonlinearities at the single-photon level. In this context, we offer within the A02 project of the TRR142 the position of a

PhD student (f/m/d)

(Salary level 13 TV-L)

starting as soon as possible. The position (75% regular working time) entails a fixed-term contract for the duration of a PhD project. The successful applicant will be working on a cooperation project at the connection of Theoretical Physics and Experimental Physics. This position is limited to 3 years (according to the German law "Wissenschaftszeitvertragsgesetz") and includes a teaching responsibility of up to 3 hours per week. The possibility to graduate as a PhD is provided.

Position Profile:

- Development and application of microscopic theoretical models for the analysis of the interaction between semiconductor nanostructures in microcavities and light using semiclassical and fully quantized formulations, i.e., classical and quantum light.
- Development and application of efficient numerical simulations with a special focus on nonlinear optical experiments, e.g., four-wave mixing and multi-wave mixing, and quantum optical excitation and photonic quantum correlations in the signals.
- Numerical simulations for experimental setups and results of our project partners and proposals of promising experimental configurations.

Your Profile:

- Excellent Master's degree in physics or a closely related, relevant subject
- Background in at least one of the following fields:
 - Coherent semiconductor optics
 - Theoretical quantum optics
 - Numerical simulation of nonlinear optics or quantum optics

Paderborn University is a family-friendly university and supports its employees with the compatibility of career and family. We make personnel decisions based on qualifications, skills, and academic achievements. Applications from women are particularly welcome and, in case of equal qualifications and experience, will receive preferential treatment according to state law (LGG). Part-time employment is generally possible. Qualified disabled people (in the sense of the German social law SGB IX) are also encouraged to apply.

For further information please contact Prof. Dr. Torsten Meier. Please send your application AS A SINGLE PDF FILE in German or English to torsten.meier@uni-paderborn.de referring to the **reference no. 5621**.

Information regarding the processing of your personal data can be located at: <https://www.uni-paderborn.de/en/zv/personaldatenschutz>

Prof. Dr. Torsten Meier
Paderborn University
Physics Department and PhoQS
Warburger Straße 100
D-33098 Paderborn
Germany

