UNIVERSITÄT PADERBORN

Paderborn University is a high-performance and internationally oriented university. 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 employees in research, teaching, technology and administration a lively, family-friendly and equal opportunity environment, a lean management structure and diverse opportunities. **Join us to invent the future!**

With the Institute for Photonic Quantum Systems (PhoQS), Paderborn University aims to establish an international research center in the field of photonic quantum technologies. The goal is to develop new technologies for photon-based quantum applications as well as new theoretical and experimental concepts and research approaches. The ultimate focus is on the understanding and control of photonic quantum simulators and quantum computers.

Within this scope, we invite applications for the following fixed-term position (75% of the regular working time), which will start at the earliest opportunity:

Ph.D. Student (f/m/d)

(Salary level 13 TV-L)

The position is embedded within the project "Quantenrepeater.Net (QR.N)" funded by the Federal Ministry of Education and Research (BMBF). Employment is initially limited to three years and adheres to the legal regulations laid out in the WissZeitVG. The setting period corresponds to the project period.

In the collaborative project, we will develop integrated optical devices in thin-film lithium niobate (TFLN) for efficient frequency conversion.

The position will be integrated in a large, dynamic, and friendly international group, with expertise from device design and fabrication to quantum photonics and networking. The following are examples of relevant tasks

- Modeling of integrated optical structures
- Modeling of nonlinear conversion processes
- Design and/or fabrication of periodically poled waveguides in TFLN
- Characterization and optimization of the devices
- Detailed studies of the impact of fabrication parameters on device performance
- Noise characteristics and quantum frequency conversion at single photon level

It is expected for the successful candidate to have experience in one or more of the following areas:

- Cleanroom experience
- Characterization of linear and nonlinear properties of optical devices
- Integrated optics
- Quantum optics

Hiring requirement:

Suitable candidates have completed their master in physics or a closely related subject.

We offer:

- Flexible working hours and the individual option of mobile working
- Wide range of health, counseling and prevention services
- Attractive fringe benefits such as childcare facilities and sports activities
- Opportunities for internal and external training and development
- Additional benefits in accordance with the collective agreement of the federal states (TV-L), such as annual bonuses and capital-forming benefits as well as the VBL supplementary pension scheme

Applications from women are particularly welcome and, in case of equal qualifications and experiences, will receive preferential treatment according to to state law (LGG), unless there are preponderant reasons to give preference to another applicant. Part-time employment is generally possible. Applications from disabled people with appropriate suitability are explicitly welcome. This also applies to people with equal opportunities in accordance with the German social law SGB IX.

Please send your application including a CV and list of publications (preferably in a single pdf file) using the **Ref. No. 6839 by 7th March 2025** via e-mail to christine.silberhorn@upb.de with copy to harald.herrmann@upb.de.

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

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