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 2,500 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!

With the Institute for Photonic Quantum Systems (PhoQS), the 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 (100% of the regular working time), which will start at the earliest opportunity:

Postdoc (f/m/d)
(salary is according to TV-L 13)

The position is embedded in the project “Photonic Quantum Computer (PhoQuant)” of the Federal Ministry of Education and Research. Employment is initially limited to three years and adheres to the legal regulations laid out in the WissZeitVG.

Specifically, we are looking to employ a postdoc in the field of integrated optics technologies who will advance the fabrication of periodically poled waveguides in potassium titanyl phosphate (KTP) for use in photonic quantum computing systems based on Gaussian Boson sampling at the Institute for Photonic Quantum Systems (PhoQS). The following are examples of relevant tasks:

- Development of photon source in Potassium Titanyl Phosphate (KTP) waveguides
- Modeling of KTP devices for quantum state generation
- Optimization and characterization of KTP device quality
- Development and optimization of optical setups for KTP quantum light experiments
- Characterization and operation of KTP based quantum light sources
- Assistance training Doctoral, Masters, and Bachelors students

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

- Integrated optical device fabrication and technology
- Potassium Titanyl Phosphate technology
- Modeling of integrated optical devices
- Nonlinear optics, especially frequency conversion
- Integrated optics, especially guided-wave parametric down-conversion
- Quantum optical experiments and their optical setups

Knowledge in programming with Python, Lumerical, Rsoft and/or Comsol is beneficial.

Hiring requirement:

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

Since Paderborn University seeks to increase the number of female scientists, applications of women are especially welcome. In case of equal qualification and scientific achievements, they will receive preferential treatment according to the North Rhine-Westphalian Equal Opportunities Policy (LGG), unless there are cogent reasons to give preference to another applicant. Likewise, applications of disabled people with appropriate qualification are explicitly requested. This also applies to people with equal status according to 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. 5198 by 08.04.2022 via e-mail to benjamin.brecht@upb.de.

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

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