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), 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:

Seniar researcher (w/m/d)
(salary is according to 14 TV-L)

The position is embedded in the project **"Photonic Quantum Computing (PhoQC)"** of the Ministerium für Kultur und Wissenschaft of the state of Northrhine-Westfalia (MKW NRW). Employment ends on 31.10.2024 and adheres to the legal regulations laid out in the WissZeitVG.

Specifically, we are looking for a project leader in the field of theoretical physics who will advance the design and optimisation of photonic quantum systems based on numerical simulations at the Institute for Photonic Quantum Systems (PhoQS). The following are examples of relevant tasks:
- Development of models based on microscopic theory for the precise description of integrated optical components in photonic quantum systems and quantum photonic light sources based on lithium niobate and quantum dots
- Theoretical analysis of applications of integrated photonic systems in quantum simulators and in quantum information theory
- Simulation of photonic quantum systems in cooperation with experimental research groups
- Development and application of numerical methods for efficient simulations of photonic quantum systems in cooperation with groups of applied mathematics
- Optimization of the properties of large photonic quantum systems including losses and manufacturing tolerances
- Development and application of numerical methods for the simulation, optimization, and control of complex quantum networks
- Acquisition of, as well as assistance in managing existing, third-party funding
- Assistance training Doctoral, Masters, and Bachelors students
- Teaching on the order of 4 teaching hours (SWS) per week

It is expected for the successful candidate to have an established academic profile and previous experience in at least one of the following areas:
- Theoretical quantum optics
- Quantum information theory
- Numerical simulations of photonic systems
- Numerical simulations of quantum systems

Hiring requirement:
Suitable candidates have completed their Ph.D. (preferably within the last 5 years) and have demonstrated extraordinary scientific achievements after their PhD as well as proven teaching experience. Experience in the acquisition and administration of third-party funding is desirable.

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. 5133** via e-mail to benjamin.brecht@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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