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, t**he Integrated Quantum Optics group invites applications for the following fixed-term position (75% of the regular working time)**, which will start at the earliest opportunity:

Researcher (f/m/d)
(Salary level according to 13 TV-L)

The position is embedded in the research on quantum optics with pulsed light of the Integrated Quantum Optics group. 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 PhD student in the field of high-dimensional source and process engineering, who will advance the research on high-dimensional, frequency entangled parametric down-conversion, study fundamental questions of entanglement (witnessing, steering), and actively drive the development of quantum technologies based on high-dimensional frequency encodings. The following are examples of relevant tasks:
- Conception and realization of enhanced experimental architectures for generating, manipulating, and detecting high-dimensional frequency entanglement
- The theoretical and experimental study of entanglement and other non-classical properties
- Optimization of pulse shaping for source manipulation
- Development of thin-film lithium niobate structures for advanced sources
- Assistance in training Master, and Bachelor students
- Participating In teaching activities, up to 4 hours (SWS) per week

It is expected for the successful candidate to have experience in one or more of the following areas:
- Engineering of the joint spectral amplitude of photon pairs
- Pulse shaping and characterization
- Photon counting measurements
- Second-order interference for quantum state characterization
- Integrated quantum optics with waveguide structures

Knowledge in programming with Python is beneficial.

Recruitment requirements:
Suitable candidates have completed their master's 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
- A friendly and flexible working environment as well as an ambitious, successful and collegial team with a strong and impactful international research network

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. 7194** latest until J**anuary, 23rd 2026** via e-mail to christine.silberhorn@upb.de and in copy 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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HR EXCELLENCE IN RESEARCH

TOTAL E-QUALITY DIVERSITY

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