The University of Paderborn is a high-performance and internationally oriented university with approximately 20,000 students. Within interdisciplinary teams, we design forward-looking research, innovative teaching and the active transfer of knowledge into society. As an important research and cooperation partner, the university also shapes regional development strategies. We offer our more than 2,300 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 Faculty of Science, Department of Physics, Integrated Quantum Optics Group, offers the position of

**Researcher/PhD student**
(pay scale 13 TV-L)

starting at the earliest possible date. The position (75 % of regular working time) entails a fixed term contract for the duration of the PhD project in the field of Integrated Quantum Optics and is initially limited to 3 years, depending on the previous qualification (according to the German law "Wissenschaftszeitvertragsgesetz").

**Position Profile:**
- Position within the Quantum Flagship project “Sub-Poissonian Photon Gun by Coherent Diffusive Photonics” (H2020-FETFLAG-2018-03).
- This project aims to realize a completely new way to generate non-classical light: a deterministic photon gun based on coherent diffusive photonics in dissipatively-coupled optical waveguides.
- With strong theory and fabrication support from our own group and project partners, the goal is to verify and characterize non-classicality and entanglement generated by the new structures, by:
  - Experimentally developing a low-loss massively-multiplexed detection device optimized for superconducting single photon detectors.
  - Characterizing the generated states by means of gfunctions and photon number reconstruction.
  - Measuring entanglement of multi-photon states using two-channel weak-field homodyne schemes.
- 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.

**Your Profile:**
- Completed university degree in physics
- Experience in experimental physics, in particular quantum optics
- Experience in quantum state tomography and characterization of non-classicality
- Theoretical knowledge of modelling and simulation of physical systems
- Knowledge of data analysis and programming

Applications from women are particularly welcome and, in case of equal qualifications and experience, will receive preferential treatment according to state law (LGG). Qualified disabled people (in the sense of the German social law SGB IX) are also encouraged to apply.

Please send your application **by 23.11.2018** with reference no. 3571 to:

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