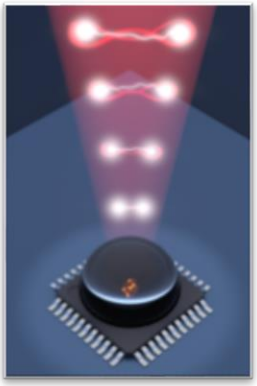
Leibniz Universität Hannover

PhD and Postdoc Positions

Quantum Optics and Communication with Semiconductor Nanophotonic Devices

The Leibniz University Hannover is a member of TU-9 in Germany and has the highest number of DFG grants in the research area of Optics and Quantum Optics.



Within the **Cluster of Excellence** “QuantumFrontiers”, the newly granted **BMBF grant** “Quantumrepeater.Link” (QR.X) and the **DFG grant for a Quantum Communication Development Environment** “InterSync”, PhD and Postdoc positions are available immediately in the group of **Prof. Dr. Fei Ding** in Leibniz University Hannover.

Our group plays a leading role in the generation of entangled photons based on semiconductors. Often referred to as artificial atoms, semiconductor quantum dots (QDs) are among the most promising single and entangled photon sources to build a solid-state quantum photonic network.

We aim to build an elementary QD network via scalable interactions of single or entangled photons, in a fashion similar to that of real atoms. A central topic is the development of hybrid nanophotonic devices that allow for highest optical quality by using dynamic tuning mechanisms. The goal is to utilize such devices in **long-distance quantum links**, for quantum communication or distributed quantum computation. The solid-state quantum photonic platforms will furthermore extend the applications in **metrology beyond the quantum limit**. To these goals, we join forces with the National Metrology Institute of Germany (PTB) and the Technical University Braunschweig, in particular for establishing the “Niedersachsen Quantum Link”, a metrology assisted fiber testbed for quantum communication applications.

We are a growing international and strongly collaborative group. The candidates should have a background and strong interest in experimental quantum optics or/and semiconductor physics and nanotechnology. Knowledge of molecular beam epitaxy or programing languages is a plus, but not required. The 3-year PhD positions are at the Salary Scale TV-L E13 (75%) and the Postdoc positions at TV-L E13, (100%).

Interested candidates should send a detailed curriculum vitae including a list of publications and the names of professional references, to **Prof. Dr. Fei Ding** (f.ding@fkp.uni-hannover.de). We promote equal opportunities and diversity, and highly encourage women to apply.

Federal Ministry of Education and Research

DFG Deutsche Forschungsgemeinschaft

erc European Research Council