

The Paul Drude Institute (PDI) performs basic research as a lively symbiosis of materials science and solid state physics. Our research aims at inspiring and demonstrating new functionalities for future information technologies. As a member of the Leibniz-Gemeinschaft and Forschungsverbund Berlin e. V., we are an independent research institute with about 100 employees and collaborate with all three universities in Berlin. We are located in the very heart of the city near the Gendarmenmarkt. You may find more details at [www.pdi-berlin.de](http://www.pdi-berlin.de).

## Ph. D. Position for Spatially Resolved Spectroscopy of Complex Nanostructures (m/f/d)

PDI has a leading expertise in the growth and investigation of group-III-V nanowires, which have a large potential for applications in optoelectronic devices. We are currently developing nanolasers based on GaAs/(In,Ga)As core/shell nanowire structures for the direct integration on Si waveguides, which would facilitate intra- and inter-chip optical interconnects. To enhance the device efficiency, we have to improve our understanding of how the emission spectra of the nanowires are influenced by factors such as composition, dimensions, doping, and crystal structure. Using cathodoluminescence (CL) spectroscopy in a scanning electron microscope (SEM), we can resolve the emission properties on a nanoscale. In the same SEM, we can also map the crystal structure by electron backscatter diffraction (EBSD) and investigate at the properties of fully processed nanolasers by measuring the electron beam-induced current (EBIC). Due to the high spatial resolution of the SEM, we can correlate these techniques on individual nanowires. We are looking for a motivated Ph. D. student to carry out CL spectroscopy, EBSD, and EBIC measurements on GaAs/(In,Ga)As core/shell nanowires in close collaboration with the researchers growing these structures.

We invite applications from experimental physicists with a competitive master degree and a background in solid state physics. Experience with electron microscopy, luminescence spectroscopy, and/or working with semiconductor nanowires is advantageous.

The position is available for up to 3 years starting **April 1<sup>st</sup>, 2020**. Payment is according to TVöD (Treaty for German public service). The Paul Drude Institute aims at increasing the quota of female employees. Applications from women are therefore encouraged. Among equally qualified applicants, preference will be given to disabled candidates.

Applications, including curriculum vitae, a list of grades, and a dedicated motivation letter, should be sent by **February 28<sup>th</sup>, 2020** to: Mr. Andreas Hartung, Paul-Drude-Institut für Festkörperelektronik, Leibniz-Institut im Forschungsverbund Berlin e.V., Hausvogteiplatz 5–7, 10117 Berlin, Email: [jobs@pdi-berlin.de](mailto:jobs@pdi-berlin.de)



For any scientific or technical questions related to this position, please contact Dr. Jonas Lähnemann, Email: [laehnemann@pdi-berlin.de](mailto:laehnemann@pdi-berlin.de)

