

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 Cathodoluminescence Spectroscopy of Core/Shell Nanowires

Group-III-V nanowires, one of the core research areas of the PDI, have a large potential for applications in optoelectronic devices. We are currently developing nano-lasers 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. In this context, it is important to achieve a detailed understanding of the emission spectra of the nanowires and on how they are influenced by the choice of composition, dimensions, doping, and crystal structure. Using cathodoluminescence spectroscopy (CL) in a scanning electron microscope (SEM), we can resolve the emission properties on a nanoscale. In the same SEM, the crystal structure can be investigated by electron backscatter diffraction (EBSD), and the properties of a fully processed nano-laser can be analysed by measurements of the electron beam induced current (EBIC). The results obtained using all these highly spatially resolved techniques can be directly correlated for the same set of nanowires. We are currently looking for a Ph. D. student to carry out CL, EBSD, and EBIC measurements on GaAs/(In,Ga)As core/shell nanowires in close collaboration with the PostDoc growing these structures.

We invite applications from physicists with a competitive master degree and a background in experimental 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 **September 1<sup>st</sup>, 2019**. Payment is according to TVöD (Treaty for German public service). PDI is an equal opportunity employer. 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 specific motivation letter, should be sent by **August 30<sup>th</sup>, 2019** 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)



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

