## Helmholtz-Zentrum Dresden-Rossendorf e.V.

With cutting-edge research in the fields of ENERGY, HEALTH and MATTER, around 1,500 employees from more than 70 nations at Helmholtz-Zentrum Dresden-Rossendorf (HZDR) are committed to mastering the great challenges facing society today. The Institute for Ion Beam Physics and Materials Research is dedicated to the study of materials and their nanostructures that can be considered for future applications in information technology and are based on electrical, magnetic or optical functionalities. The Department of Nanoelectronics is looking for a

# PhD Student (f/m/d) Metallic and semiconducting nanostructures based on self-organized materials

The DFG-funded Research Training Group 2767 „Supracolloidal Structures: From Materials to Optical and Electronic Devices“ aims to train a new generation of experts who will design materials made of supracolloidal structures from the drawing board to application in components. Supracolloidal structures are complex superstructures composed of different nanoparticles, similar to how atoms are linked to molecules. This results in innovative, exceptionally promising optical and electronic properties that go far beyond those of the individual building blocks. To date, these structure-property relationships of the assembled particles are not adequately understood. The technological visions of these new materials include novel solar cells, field amplification for highly sensitive spectroscopy, biosensing applications where complex detection processes are made simpler, and even on-site sample examination using smartphones. Participating institutions: Dresden University of Technology (TUD), the Universität Leipzig, Leibniz Institute for Polymer Research Dresden and the Helmholtz-Center Dresden-Rossendorf.

City: Dresden; Starting date (earliest): 01/04/25; Remuneration: TVöD-Bund; Reference number: 2025/37; Closing date: 20/02/25

### Working field

- Fabrication and electrical characterisation of nanoelectronic components based on self-assembled nanostructures and 2D-materials
  -Development of novel reconfigurable electronics based on the nanoelectronic components characterised in the project
  -Electrical contacting and characterisation of nanostructures in collaboration with partners in RTG 2767

### Requirements

-Above-average university degree (Master/Diploma) achieved in short study period in the field of Electrical Engineering, Material Science, Physics or related field with focus on nano- and microelectronics
-Experience in nanofabrication and electrical characterisation of nanoelectronic devices
-Willingness and ability to think beyond the boundaries of your field, to act in an international and diverse environment and to live an open and constructive

communication
-Strong analytic and problem-solving skills, creativity
-Independent, target- and solution-driven work attitude
-Proficiency in spoken and written English, knowledge of German would be a plus

**What we offer**

-A vibrant research community in an open, diverse and international work environment

- Scientific excellence and extensive professional networking opportunities
  -A structured PhD program with a comprehensive range of continuing education and networking opportunities - more information about the PhD program at the HZDR can be found here
  -Salary and social benefits in accordance with the collective agreement for the public sector (TVöD-Bund) including 30 days of paid holiday leave, company pension scheme (VBL)
  -We support a good work-life balance with the possibility of part-time employment, mobile working and flexible working hours
  -Numerous company health management offerings
  -Employee discounts with well-known providers via the platform Corporate Benefits
  -An employer subsidy for the "Deutschland-Ticket Jobticket"

**Application**

We look forward to receiving your application documents (including cover letter, CV, diplomas/transcripts, etc.), which you can submit via our online-application-system: https://www.hzdr.de/db/Cms?pNid=490&pLang=en&pOid=74092

More information at https://stellenticket.de/191746/TUBS/
Offer visible until 20/02/25