

Vacancy Notice No. 60E/2015

The Helmholtz-Zentrum Dresden-Rossendorf e. V. (HZDR) has an excellent reputation as an international competence centre for research in the sectors health, energy and matter with more than 1,100 employees. HZDR is a member of Germany's largest research organisation – Helmholtz Association (HGF). Further information can be found at <http://www.hzdr.de>.



The Institute of Ion Beam Physics and Materials Research invites applications as

PhD Student (m/f)

The position is related to ion beam processing of semiconductor structures for low-power electronics. The position will be available from 01.02.2016, with a starting salary corresponding to 75% of full-time scientist position. The employment contract is limited to three years. The salary is based on the collective agreement TVöD-Bund. The place of work is Dresden-Rossendorf.

Requirements:

- Diploma or Master's degree or equivalent in physics or materials science
- knowledge in materials science and technology of semiconductors
- knowledge in ion beam physics, preferably with experience with focused ion beam systems
- experience with scanning probe microscopy and/or other scanning probe technologies

Tasks:

The research of the successful candidate will be performed in the framework of a European project on extremely low power consuming Single Electron Transistors (SETs) for mobile electronics. The main aim is to understand and subsequently control the fabrication of individual Si nanodots by ion beam mixing. The task requires the ability to work in a multinational team that will focus on the fabrication of a SET structure able to demonstrate the functionality of the approach for an integrated SET/FET device. More specifically the work will cover the followings tasks:

- defining conditions for successful nanodots formation by ion beam mixing
- spatially controlled implantation of He/Ne into silicon using a helium ion microscope
- nanodot formation by broad-beam implantation of He/Ne into pre-structured silicon
- characterization of test and device structures by means of scanning probe microscopy and electron microscopy

For further information, please contact Dr. Gregor Hlawacek, Tel.: +49 351 260 - 3409 and Dr. Johannes von Borany, Tel.: +49 351 260 - 3378.

Please submit your complete application (cover letter, CV, certificates,...) by 31.12.2015 via **Online application** <https://www.hzdr.de/jobs>.

Equal opportunities are an integral part of our personnel policy, we therefore particularly welcome applications from qualified women. Severely disabled persons are given priority where applicants are equally qualified.

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