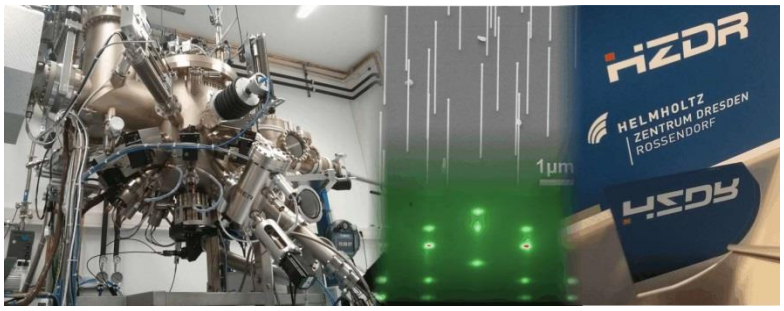
HELMHOLTZ ZENTRUM DRESDEN ROSSENDORF



We are looking for highly motivated and enthusiastic individuals to pursue a Ph.D. in the field of III-V semiconductor nanowires.

Topic: III-V semiconductors in the form of free-standing nanowires show new strengths for a wide range of future applications in nanotechnology, i.e. high-efficiency solar cells, lasers with sub-wavelength size, low-power electronics, quantum computing, thermoelectrics, chemical sensors, etc. Furthermore, the nanowire geometry offers unique possibilities for strain engineering, allowing for monolithic integration of III-V nanowires on Si-CMOS platforms or realization of highly strained heterostructures within the nanowires. The Ph.D. position that we offer in our group concerns the experimental study of the epitaxial growth and the (opto-) electronic properties of highly strained GaAs-based nanowire heterostructures on Si substrates, and the exploration of novel device concepts. Responsibilities and tasks:

- Design and realization of growth experiments using molecular beam epitaxy
- Characterization of nanowires with electron microscopy and optical/electrical methods
- Simulation of heterostructures with software packages (e.g. nextnano)
- Collaboration with partner groups and realization of joint experiments at external facilities (e.g. x-ray diffraction at various synchrotron facilities in Europe)
- Publication of results in peer-reviewed journals and presentation at international conferences

Location: Our research group is led by Dr. Emmanouil Dimakis and is part of the *Institute of Ion Beam Physics and Materials Research* at the *Helmholtz-Zentrum Dresden-Rossendorf*. The *Helmholtz Association* is the largest research organization in Germany and focuses on use-inspired basic research. Dresden is one of the cities with the highest density of research institutes and high-tech companies in Europe. The selected candidate will have the opportunity to do research in an international environment and will be enrolled in a degree programme of the *Technische Universität Dresden*, one of the eleven *German Universities of Excellence*.

Contract details: The position will be available from 1 September 2018 and the employment contract is limited to three years. The salary will be based on the collective agreement TVöD-Bund.

Qualifications: Candidates should have a master's degree (or obtain it before 1 September 2018) in physics, materials science or electrical engineering with a strong background in solid-state physics. Any work or training experience in a semiconductor laboratory is a plus. Proficiency in English is a prerequisite.

Application: Applications should be submitted online to e.dimakis@hzdr.de (email title: “Application for PhD 2018_Applicant’s_Name”) not later than 31 May 2018 and include the following documents in PDF: letter of motivation (cover letter), curriculum vitae, grade transcripts and B.Sc./M.Sc. diploma.

For further information you may contact Emmanouil Dimakis (e.dimakis@hzdr.de , tel: +49 351 260 2765) or follow the links: https://www.hzdr.de/db/Cms?pNid=1002&pOid=43975, https://tu-dresden.de/