The institute Accelerator Physics is looking for:

PhD Student (m/f) - Accelerator Physics - Commissioning of an SRF Photoinjector for the Energy-Recovery Linac bERLinPro

Reference No.: FG 2018/15

The Helmholtz Zentrum Berlin für Materialien und Energie GmbH (HZB) operates one of the world´s most advanced Synchrotron Light Sources (BESSY II) in the VUV to soft x-ray range, as well as the low energy storage ring Metrology Light Source (MLS) of the Physikalisch Technische Bundesanstalt.

BERLinPro, a 50 MeV electron energy ERL, is currently being constructed as a test facility, to investigate technologies crucial to the realization of future large scale projects. An important part of BERLinPro is the superconducting radio frequency photoelectron source, which is to generate an electron beam with high average current and low emittance. In close collaboration with the Institute for Superconducting Radio Frequency Systems and Technology (as well as other national and international collaboration partners), the Institute of Accelerator Physics works on the development and optimization of this electron source for BERLinPro.

Topic and tasks

- Commissioning and further development of GunLab and its beam instrumentation.
- Beam dynamics investigations of an electron beam generated in a SRF gun.
- Hands-on support during setup and technical commissioning of the system connected to the SRF gun.
- Development of methods for the description, measurement and mitigation of processes related to the generation of unwanted beam (halo, dark current).

Requirements

- Good skills in beam physics of space-charge dominated electorn beams.
- Experience with methods of electron beam diagnostics.
- Interest in issues of accelerator physics.
- Fulfillment of the critera for PhD candidates at the Humboldt-Universität zu Berlin, MSc in physics or comparable degree.

What we offer

Fixed term contract for 36 months . The salary is based on the Collective Agreement for the German Public Service (TVöD-Bund).

We particularly welcome applications from women. Preference will be given to handicapped applicants provided equal suitability.

How to apply

Have we sparked your interest? Then we look forward to receiving your application by 13.01.2019.

For German version, please click on the following link: German Version.

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