

Postdoctoral position in superconducting accelerator technology at Uppsala University, Sweden

Are you passionate about working with superconducting magnets and accelerating cavities alongside skilled and supportive colleagues in an international environment? Are you looking for an employer that invests in sustainable employments and offers safe, favorable working conditions? We welcome you to apply for a postdoctoral position at Uppsala University.

The Department of Physics and Astronomy is hiring a postdoc to work with particle accelerators. The Department is one of the largest at Uppsala University, with around 400 employees, and is located in the Ångström Laboratory in Uppsala. The FREIA Laboratory, which is part of the department, focuses on the research and development of particle accelerators and related instrumentation. FREIA collaborates with major research facilities, such as ESS in Lund and CERN in Switzerland, and is at the forefront of scientific advancements in particle accelerator physics and technology. Among the capabilities of FREIA is to test superconducting magnets in a vertical cryostat and test accelerator cavities and cryomodels in a horizontal cryostat, both available in the laboratory. Tests of several different superconducting magnet prototypes are foreseen as from 2025. FREIA is furthermore at the starting point of extensive tests of a series of superconducting radiofrequency cavities and cryomodels for the new MINERVA proton accelerator in Belgium. The successful candidate will play the leading role in the cold-testing of superconducting magnets and will also have the opportunity to contribute to the cavity and cryomodel tests.

Applicants are offered to work in an exciting, modern research environment and will have the possibility to collaborate with top experimental and theoretical physics groups both locally and internationally. In order to acquire the competence required to play the leading role in the cold-testing of superconducting magnets in FREIA, it is foreseen that the candidate at the beginning of the contract will spend a period at CERN working with the team there which is testing superconducting magnets in a test-stand that is very similar to that in FREIA.

Duties

- After a training period at CERN to lead the cold tests of superconducting magnets using FREIA's vertical cryostat system.
- Plan and monitor measurements, troubleshoot experiment setups, and operate the cryogenic and vacuum infrastructure.
- Participate in the design and construction of superconducting magnets.
- Report on and document the activities.

In addition to the magnet-related activities, the candidate will have the opportunity to contribute to the characterization of superconducting radiofrequency cavities and cryomodels, as well as to the overall development and evaluation of instrumentation and experiments at the FREIA Laboratory. An active contribution to outreach activities and to the supervision of students is expected. The work will involve domestic and international travel.

Requirements

A PhD degree in physics or engineering, or a foreign degree equivalent to a PhD degree in physics or engineering, is required. The degree needs to be obtained by the time of the employment decision. Preference will be given to those who have obtained their PhD degree within three years prior to the application deadline. The three-year period may be extended due to special circumstances such as sick leave, parental leave, or union duties.

The following qualifications are required to succeed in the position:

- Knowledge of superconductivity.
- Knowledge of electromagnets
- Knowledge of particle accelerators.
- Ability to communicate well, both technically and at a general scientific level.
- Ability to produce good written reports and articles.
- Good oral and written proficiency in English.
- Some experience from scientific experiments and measurements.
- Ability to work both independently and in a project group.

About the employment

The employment is a temporary position of 2 years according to central collective agreement. Full time position. Starting date as agreed. Placement: Uppsala.

For further information about the position, please contact:

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