



Elettra Sincrotrone Trieste

Technical or Scientific Staff Member for the Elettra 2.0 Pre-injector

Deadline: 25 June 2024

Ref: CA/24/24

Background

Elettra Sincrotrone Trieste is an international multidisciplinary research center operated as a user facility, featuring a 2.0/2.4 GeV, third-generation synchrotron light source (Elettra), a new free-electron laser light source (FERMI) and a variety of support laboratories. The extremely high quality of the machines and beamlines has set new performance records and has been producing results of great scientific and technological interest. In order to allow the laboratory to remain competitive in the next 20 years, an entirely new source - Elettra 2.0 - belonging to the new generation of storage rings (DLSR or Diffraction Limited Storage Ring) is being developed. The new source will exhibit a major increase in the brilliance and coherence fraction of the photon beams. The Elettra 2.0 optics is based on our enhanced symmetric six bend achromat structure (S6BA-E) with a 12-fold symmetry and an emittance of 200 pm-rad at 2.4 GeV. The new structure creates also straight sections in the arcs permitting the installation of additional insertion devices, thus increasing the number of beamlines. Existing beamlines will have to be upgraded and new beamlines developed to take full advantage of the characteristics of Elettra 2.0. The new machine is scheduled for commissioning in the second half of 2026. See <http://www.elettra.eu> for more information.

Job description

Implementation of DLSR presents a series of critical accelerator physics and technology issues as a result of the reduced acceptance due to enhanced nonlinearities and sensitivity to machine errors. Beam preparation at low energy and injection into the Booster ring is one of the critical aspects of the entire accelerator chain.

The successful candidate will be a member of the Accelerator Group, assist the Pre-injector Workpackage Leader in coordinating all interventions on the pre-injector, be involved in all operational aspects of the Elettra pre-injector already being upgraded in view of Elettra 2.0, including hardware and software maintenance, studies to improve acceleration and transport efficiency, interaction with private companies, preparation and submission of orders and tenders. In the long term, he/she is expected to give important contributions to accelerator physics and technology R&D.

Qualifications

The following qualifications and technical skills are required:

- a) Technical diploma in electronics or electro-mechanics, OR
Master degree in Electrical Engineering, Electronic Engineering or Communication and Information Engineering or Physics.
- b) Theoretical and practical experience with microwave radio frequency circuits and/or waveguides.

The following scientific and technical skills are desirable, although not mandatory:

- knowledge of particle accelerator physics and technology,
- programming skills with Matlab and/or Python,
- knowledge of SPICE or similar software tools for the design and simulation of electronic circuits and boards.

A doctoral degree in Electrical, Electronic Engineering, Physics or a related field would be considered an additional asset.

Elettra - Sincrotrone Trieste S.C.p.A.

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Società di interesse nazionale
ai sensi dell'art. 10, comma 4,
L. 19 ottobre 1999 n. 370





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The successful candidate should possess strong interpersonal skills to pursue collaborative research programs in a team-oriented environment and become part of existing research collaborations. Good time management skills and ability to prioritize are expected, together with the ability to interact with project partners and work as part of a multidisciplinary team.

Good oral and written communication skills in Italian are essential. A working knowledge of the English language is desirable.

General information

The deadline for the submission of the application is June 25, 2024.

The appointment will be a fixed term contract with an initial duration of 24 months in accordance with the National Metalworkers Collective Labour Agreement and the Company Agreement, ex. art. 8 of the Decree Law 138/2011, dated 28th March 2024.

The salary will be commensurate with the previous experience and qualifications of the candidate.

Applications should include full curriculum vitae, contact information (including electronic mail) of at least two references.

Employees of Elettra Sincrotrone Trieste S.C.p.A. in force with a permanent contract will not be eligible for the selection.

The interviews may be held via video conferencing.

In accordance with the provisions of article 21 of the Italian legislative decree no. 39/2013 and in conjunction with article 53 (subsection 16ter) of Italian legislative decree no. 165/2001, employees or former employees of any Italian Public Entity who have exercised authority over Elettra Sincrotrone Trieste S.C.p.A. or have negotiated with Elettra - Sincrotrone Trieste S.C.p.A. within the last three years will be excluded from the present selection procedure. We thank all applicants in advance.

For more information, please contact Simone Di Mitri (email: simone.dimitri@elettra.eu).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?id=4122>

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