



Elettra Sincrotrone Trieste

Magnet Physicist or Engineer for Elettra 2.0

Deadline: 5 September 2021

Ref: GA/21/20

Company description

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. See <http://www.elettra.eu> for more information.

Beamline/Activity/Project description

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. Additionally, three in-vacuum undulators and two high-field superbends are considered. The new machine is scheduled for commissioning in the second half of 2026.

Job description

The selected candidate will be part of the team in charge of the design, development, prototyping and measurement of the superconducting magnets of Elettra 2.0. He/she will also participate in all activities related to the cryogenic tests, characterization of the field strength, alignment and quality of magnets. He/she will collaborate in the magnetic measurements and post processing of the results and data analysis. All activities will be done in close collaboration with beam physics specialists.

Qualifications

A university degree in Electronic Engineering, Mechanical Engineering, Mechatronic Engineering or Physics is required. Previous experience in the design, manufacturing, test and commissioning of superconducting magnets is expected.

The following technical skills are essential:

- knowledge of low frequency electromagnetism;
- familiarity with FEM simulation software for the development and design of electromagnets.
- knowledge of cryogenic technologies.

Familiarity with programming languages such as Matlab and Python and with the main CAD tools and simulation software as Opera3D would be considered an advantage.

Good time management skills and the ability to prioritize are expected, together with the capacity to interact with staff and to work as part of a multi-disciplinary team.

Good oral and written communication skills in English and the ability to work productively in a team are essential.

The appointment envisioned is a fixed term contract with a duration of 36 months.

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

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

Due to the situation related to the COVID-19 virus, the interviews will be performed through video conferencing.

The deadline for the submission of the application is September 5, 2021.

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 Riccardo Tommasini (email: riccardo.tommasini@elettra.eu).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/about/careers/working-withus.html?id=2003>

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