



Elettra Sincrotrone Trieste

Mechanical Engineer for the front-end design - Elettra 2.0 Project

Deadline: 28 February 2023

Ref: RA/23/4

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 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

The successful candidate will collaborate with the Mechanical Design Office, that is in charge of mechanical design activities and manufacturing design of mechanical systems, structural, thermal and vibration analyses.

Main duties and responsibilities will include:

- design of front-end components and experimental equipment involving high precision motorized mechanical systems, frames, girders, vacuum and cooled components;
- perform engineering analyses and calculations;
- convert technical assessments of analysis results into design recommendations;
- produce technical documentation (design requirements and technical reports);
- supervise component procurement, manufacturing and construction;
- carry out acceptance tests;
- participate in the installations;
- comply with all Health and Safety procedures and policies;

The successful candidate will work in close collaboration with experienced mechanical engineers and experts in particle accelerators and vacuum techniques. The main working place will be Elettra, but travels to other research labs and supplier premises for factory acceptance tests (FATs) are expected.

Qualifications

A Master Degree in Mechanical Engineering or equivalent is required, together with experience in manufacturing processes and knowledge of international rules about drawing dimensioning and tolerances (UNI and ISO standards). Hands-on experience in the use of CAD software is essential. Knowledge of CATIA and PDM systems would be considered an important asset. Expertise in performing FEM calculations, mainly in the fields of thermal stresses and vibrations would be considered a key skill.

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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Knowledge of scientific instrumentation and high precision motorized systems would be considered an asset, as would be previous experience in procurement, installation, commissioning, fabrication follow-up and project management. Previous experience as analyst with Ansys Workbench would be considered a plus. Previous experience with vibration measurements would be positively evaluated.

Good oral and written communication skills in English is essential.

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

The deadline for the submission of the application is February 28, 2023.

The appointment envisioned is a fixed term contract with an initial duration of 24 months. The salary will be commensurate with the previous experience and qualifications of the candidate.

Applications should include full curriculum vitae and, if possible, contact information (including electronic mail) of the two reference.

Depending on the evolution of the COVID-19 pandemic, 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 Ivan Cudin (email: ivan.cudin@elettra.eu).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?id=2942>

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