Elettra Sincrotrone Trieste

Power Supply Engineer for the Elettra 2.0 project

Deadline: 7 January 2026
Ref: GA/25/38

Background

Elettra Sincrotrone Trieste is an international multidisciplinary research center offering international users access to synchrotron and free-electron laser radiation for the characterization and processing of matter. The extremely high quality of the light sources 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 synchrotron radiation source - Elettra 2.0 - belonging to the new generation of storage rings (DLSR or Diffraction Limited Storage Ring) is being installed and will join the already operating free-electron source FERMI in the second half of 2026. 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 are being upgraded and new beamlines constructed to take full advantage of the characteristics of Elettra 2.0. Seehttp://www.elettra.eufor more informationThe Power Supply Team is responsible for the DC power supplies of the magnets operating in the Elettra 2.0 Storage Ring, in the Elettra 2.0 Booster injector and in FERMI, as well as for the power supplies of the correction coils of the insertion devices. Its activities include the design, specification development, testing, installation and commissioning of the new converters required by the new projects. Other tasks include ordinary and extraordinary maintenance, and the design and implementation of updates of existing equipment (more than 400 DC power supplies in the Booster and FERMI systems), with power ranging from a few tens to thousands of Watts.

Beamline/Activity/Project description

The Power Supply Team is responsible for the DC power supplies of the magnets operating in the Elettra 2.0 Storage Ring, in the Elettra 2.0 Booster injector and in FERMI, as well as for the power supplies of the correction coils of the insertion devices. Its activities include the design, specification development, testing, installation and commissioning of the new converters required by the new projects. Other tasks include ordinary and extraordinary maintenance, and the design and implementation of updates of existing equipment (more than 400 DC power supplies in the Booster and FERMI systems), with power ranging from a few tens to thousands of Watts.

Job description

The successful candidate will join the team responsible for the development, construction, maintenance, and management of the power supplies for the magnets of the new Elettra 2.0 machine. He/she will participate in all activities related to high-precision and high-stability magnet power supplies, including the development and production of new units. This will involve electronic design, firmware programming, prototype testing and - occasionally - pre-series production.

Other activities will include collaboration in the definition and drafting of technical specifications followed by tendering, evaluation and factory acceptance testing and final installation.

The successful candidate will work in collaboration with physicists and other engineers for the optimal use of power supplies, understanding the physicists' needs and proposing solutions for interfacing power supplies to remote control and interlock systems.

The successful candidate may also be involved, with the other members of the team, in the maintenance activities of the converters of FERMI to free other members of the team to increase their involvement in the developments related to the new Elettra 2.0 machine.

The activity carried out covers aspects of hardware and software, such as the selection and installation of control and regulation systems of the converters, maintenance of existing systems, integration of new components and subsystems, writing of software for the control of quality of converters and writing of firmware for digital controllers of new devices.

Furthermore, other activities will include:

- Assembly and testing of prototypes;
- Realization of schematics and PCB using electronic CAD;
- Simple mechanical assemblies for realizing prototypes
- Verification of the performance of the power supplies with the instrumentation of the Power Supply Laboratory;
- Interfacing with suppliers.

Qualifications

A Bachelor or Master degree in Electronic or Electrical Engineering with specialization in power electronics or related fields is required together with the following technical skills:

- experience in power electronics and design of power converters;
- familiarity with main electronic laboratory equipment and the necessary safety precautions to be taken when working on power supplies.

The following additional technical skills would be considered an advantage:

- familiarity with Labview, MATLAB and other programming languages as well as with the main CAD (including PCB design and manufacture) and simulation software tools.
- expertise in programming and automation systems.

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.

Good oral and written communication skills in English are essential. A working knowledge of the Italian language is desirable but it is not required.

General information

The appointment envisioned is a fixed term contract with an initial duration of 24 months, renewable upon agreement of the parties. The salary will be commensurate with previous experience and qualifications of the candidate.A trial period of 3 (three) months is foreseen.

The interviews could be performed through video conferencing.

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

The ranking of suitable candidates resulting from this selection process may be used within the following 24 months.

Employees or former employees of Elettra Sincrotrone Trieste S.C.p.A., as well as current or former personnel provided by temporary work agencies will be excluded from the present selection procedure. 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 also be excluded from the present selection procedure, in accordance with the provisions of article 21 of the Italian legislative decree no. 39/2013 and in conjunction with article 53 (subsection16ter) of Italian legislative decree no. 165/2001.

The deadline for the submission of the application is January 7, 2026.

Elettra Sincrotrone Trieste

We thank all applicants in advance.
For more information, please contact Roberto Visintini (email: roberto.visintini@elettra.eu).

To apply for this position please visit the following link:
https://www.elettra.trieste.it/it/about/careers/working-withus.html?id=4276