



# Technician for the Elettra 2.0 Radio Frequency System

Deadline: 30 December 2024

Ref: GA/24/50

## 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 212 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 selected candidate will join the team working on the radio frequency (RF) system designed to accelerate and maintain the kinetic energy of the electron beam in the Elettra storage ring. The RF system uses the 500 MHz sinusoidal signals, appropriately amplified and conditioned, to create in electromagnetic field that delivers energy to the electron beam stored in the accelerator.

The new Elettra 2.0 project under development foresees the renovation of existing RF systems through the technologies of solid-state transistors for the power part and the digitization of RF signals for their conditioning through FPGA SoC technology. All electronics and safety systems subservient to the RF plants are being renovated and redesigned.

The successful candidate will:

- select electronic, electrical and RF components to make prototypes and final units,
- solder components, assemble electronic boards, and complete the fabrication of entire electronic units,
- assemble RF power lines and the new RF plants of Elettra 2.0,
- identify and detect faults in electrical and electronic units,
- test and commission components,
- maintain RF systems and, after the appropriate training, provide on-call service.

## Qualifications

A High school diploma (5 years duration) in mechatronics, electronics electrical engineering, telecommunications or higher qualification in the equivalent field is required together with ability to read and interpret electrical and electronic schematics.

Any of the following technical skills would be considered a plus:

- soldering electronic components onto printed circuit boards (PCBs) and assembling electronic devices;
- ability to use laboratory instruments such as oscilloscopes, multimeters, and signal generators;

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Elettra Sincrotrone Trieste

- ability to locate faults and defects in electronic circuits and to perform repairs and maintenance;
- experience using CAD software for electronic circuit design such as Altium;
- ability to collect and analyze test data to identify problems in circuits and components;
- ability to work with precision and attention to detail, especially during testing and quality control phases;
- knowledge of electrical safety regulations and procedures for working safely in the laboratory to prevent accidents related to high voltage and electronic components;
- ability to properly handle hazardous materials such as lithium batteries, chemicals for cleaning components, and so on;

Good oral and written communication skills in Italian language and English are required.

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

## General information

The appointment will be a fixed term contract with an initial duration of 36 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, a reference letter and contact information (including electronic mail) of at least one reference.

The ranking of eligible candidates resulting from this selection procedure may be used for additional appointments within the following 24 months.

The interviews may be held via video conferencing.

The deadline for the submission of the application is December 30, 2024.

Permanent employees of Elettra Sincrotrone Trieste S.C.p.A. and 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, 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. We thank all applicants in advance.

For more information, please contact Cristina Pasotti (email: [cristina.pasotti@elettra.eu](mailto:cristina.pasotti@elettra.eu)).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?id=4223>

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