



Elettra Sincrotrone Trieste

# Electronic Engineer for the Elettra 2.0 Radio Frequency System

Deadline: 30 December 2024

Ref: GA/24/51

## 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 Elettra 2.0 electronic beam will be accelerated thanks to a 500 MHz continuous wave RF signal in the hundred kilowatt range that feeds the resonant accelerating structures. The successful candidate will join the Radio Frequency (RF) team system whose target is designing, developing and commissioning the RF system to accelerate the electronic beam. The system is composed of RF amplifiers, waveguide runs, RF equipment and instrumentation and includes interlocks, feedback electronics and, more generally, the equipment required to safely operate the RF systems.

The successful candidate will:

- develop and assemble RF prototypes and final subsystems,
- support the design, development and maintenance of the RF digital feedback system,
- perform RF test and measurement campaign,
- commission and set into operation the RF systems, including commissioning with beam,
- interact with the Elettra 2.0 staff to integrate the RF systems in the accelerator complex.

## Qualifications

A Master degree in Electrical Engineering or related field is required together with RF or microwave expertise relevant to the job description.

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

- Ph.D. in Electrical Engineering or related field;
- knowledge of Verilog HDL programming languages and Quartus multiplatform environment for FPGA designing;
- knowledge of electronic, embedded system and circuit analysis;
- knowledge of Matlab and Python programming language;

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- familiarity with RF instrumentation (e.g., network and spectrum analyzers, signal generators).

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=4224>

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