



Elettra Sincrotrone Trieste

# Electronic Engineer

Deadline: 4 January 2024

Ref: GA/23/42

## 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 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.

## Beamline/Activity/Project description

The Instrumentation and Detectors (I&D) and Beam Diagnostics (BD) Laboratories have been established with the aim of developing cutting-edge scientific instrumentation to meet scientific needs that are not addressed by commercial offerings. They specialize in the development of particle detector and electron/synchrotron radiation diagnostics. Additionally, the I&D Laboratory provides technical and software support (LabVIEW, Matlab, Simulink, VHDL, and Verilog) to beamline scientists and all other laboratories within Elettra and FERMI.

## Job description

The successful candidate will be part of the team in charge of developing new instrumentation for experimental stations and synchrotron radiation diagnostics. He/she will be involved in the research of innovative solutions for acquisition electronics for particle detectors and digital data processing through programmable logics.

In particular, he/she will focus on:

- development of high-speed boards and FPGA programming;
- high-level software development for instrument control;
- research on sensors for scientific activities;
- Development of instrumentation for electron/synchrotron beam diagnostics.

## Qualifications

A Ph.D. in Physics, Electronic Engineering or a related discipline is required, together with proven experience in the development of scientific instrumentation and user-friendly high-level software for scientific experiments. Deep understanding of both analog and digital electronics aspects related to this development, beginning from front-end electronics, is expected, together with expertise in solid-state and MCP-based particle detectors, proficiency in low-level HDL code development and experience in CAD design.

A comprehensive understanding of Altium Design, Verilog HDL, Quartus, Python and LabVIEW would be highly desirable.

Good oral and written communication skills in English are essential. A working knowledge of Italian language would be desirable.

### Elettra - Sincrotrone Trieste S.C.p.A.

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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.

## General information

The appointment envisioned is a fixed term contract with an initial duration of 12 months.

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

Applications should include full curriculum vitae.

The deadline for the submission of the application is January 4, 2024.

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 Giuseppe Cautero (email: [giuseppe.cautero@elettra.eu](mailto:giuseppe.cautero@elettra.eu)).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?id=3621>

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