



Elettra Sincrotrone Trieste

# Physicist/Engineer for Instrumentation and Detectors

Deadline: 23 April 2021

Ref: GA/21/8

## Company description

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. See <http://www.elettra.eu> for more information.

## Beamline/Activity/Project description

The Instrumentation and Detectors Laboratory (IDL) was established to develop innovative instrumentation and detectors for new generation storage rings and free-electron laser (FEL) light sources, and, more generally, for cutting-edge scientific research in such fields. Often the instrumentation developed gives rise to commercial products. Examples include high-performance time to digital converters (TDC), electron and photon beam position monitors (BPM), fast scanning tunneling microscopes (STM), fast multichannel picoammeters and floating high-voltage (HV) power supplies.

## Job description

The successful candidate will join the Instrumentation and Detectors laboratory team and participate in all ongoing instrumentation and detector development activities. He/she will address all topics related to the general architecture of the instruments/detectors starting from the experimental needs. These include the mechanical design, which needs to take into account possible ultra-high-vacuum (UHV) compatibility issues, the electron optics, the physics of the semiconductor material constituents, the low level control and acquisition firmware, as well as instrument drivers for control and data acquisition. He/she will participate in the characterization and commissioning of the final instrument and in the development a suitable high-level software.

## Qualifications

A Ph.D. in Physics or Engineering is required together with the following technical skills:

- . mechanical CAD design experience;
- . good knowledge of UHV technology and experimental tools;
- . good knowledge of SIMION 3D ion optics simulation program;
- . good knowledge of Quartus FPGA programming environment and Verilog HDL language;
- . programming skills in LabVIEW and Python, including interfacing of instruments through the main communication protocols (RS232, TPC-IP, GPIB);

The following qualifications would be considered as additional assets:

- . research background in the fields of photoelectron spectroscopy and STM experiments;
- . experience with particle detectors based on multichannel plate (MCP) elements and centroid finding techniques.

Good oral and written communication skills in English are essential together with working knowledge of Italian language.

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

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

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The appointment envisioned is a term or permanent contract depending on the qualifications. The salary will be commensurate with the previous experience and qualifications of the candidate.

*Applications should include a full curriculum vitae, the names and contact information (including electronic mail) of two individuals who have agreed to provide references.*

*Due to the situation related to the COVID-19 virus, the interviews will be performed through video conferencing.*

The deadline for the submission of the application is April 23, 2021.

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=1802>

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