



Elettra Sincrotrone Trieste

# Accelerator Physicist for the Elettra 2.0 Project

Deadline: 9 July 2020

Ref: CA/20/25

## 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

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.

## Job description

Implementation of DLSR presents a series of critical accelerator physics and technological as a result of the reduced dynamic acceptance due to enhanced nonlinearity. DLSR are extremely sensitive to all sorts of imperfections and require extensive physical and numerical studies. Furthermore, due to the lack of space, innovative engineering solutions are needed.

The successful candidate will be a member of the machine physics team of Elettra 2.0 and is expected to give important contributions to all aspects related to accelerator physics R&D, emphasising non-linear dynamics, the effects of insertion devices and dynamic aperture optimization. He/she will be expected to address top-up issues of the new machine and contribute to the machine commissioning simulations, setting up the relevant codes as well as taking care of machine elements error handling and corrections.

## Qualifications

A master or higher degree in Physics or Engineering and working experience with storage rings is required.

Knowledge of simulation programs such as AT, Elegant and MOGA is expected.

Experience in the following areas would be considered an advantage:

- Matlab (good knowledge);
- impedance estimations and measurements.

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 is not required.

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

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*The appointment envisioned is a fixed term contract of 36 months duration. The salary will be commensurate with previous experience and qualifications of the candidate.*

*Applications should include full curriculum vitae, the names and contact information (including electronic mail) of possibly two references.*

The deadline for the submission of the application is July 9, 2020.

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 Emanuel Karantzoulis (email: [emanuel.karantzoulis@elettra.eu](mailto:emanuel.karantzoulis@elettra.eu)).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?ref=CA%2F20%2F25>

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