



Elettra Sincrotrone Trieste

Scientist for the APE-TX Beamline at Elettra 2.0

Deadline: 25 September 2025

Ref: DB/25/27

Background

Elettra Sincrotrone Trieste is an international multidisciplinary research center offering international users access to synchrotron and free-electron laser radiation for the characterization and processing of matter. The extremely high quality of the light sources 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 synchrotron radiation source - Elettra 2.0 - belonging to the new generation of storage rings (DLSR or Diffraction Limited Storage Ring) is being installed and will join the already operating free-electron source FERMI in the second half of 2026. 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 are being upgraded and new beamlines constructed to take full advantage of the characteristics of Elettra 2.0. See <http://www.elettra.eu> for more information.

Job description

The successful candidate will contribute to the design, procurement and installation of the new beamline for Advanced Photoemission Experiments with Tender X-Rays (APE-TX), which will deliver polarized, micro-focused, soft and tender X-rays for spectroscopic studies. The beamline will be dedicated to the analysis of the properties of quantum and energy materials using the Hard X-ray Photoemission Spectroscopy (HAXPES) technique and operando measurements, in particular photoemission and absorption spectroscopies in different ranges of environmental gas pressure. The new beamline will integrate the Nano Foundry and Fine Analysis (NFFA) facility at Elettra 2.0. NFFA is a distributed infrastructure for nanoscience offering open access to combined facilities for material growth and processing, characterization, numerical simulations and spectroscopic methods for the fine analysis of matter.

In particular, the successful candidate will take responsibility for the following activities:

- Coordinate with the optics group in finalizing the design of the optical layout of the new beamline.
- Assemble and test the new UHV end-station for HAXPES experiments.
- Contribute to procuring the necessary items for assembling APE-TX, defining the timeline of the construction of the beamline, installing and testing the beamline.
- Ensure the benchmarking of the new APE-TX beamline with all other beamlines of similar characteristics and scope worldwide.
- Participate in research projects of the NFFA group on quantum and energy materials exploiting the new HAXPES laboratory, the other NFFA beamlines and experimental setups, as well as applying for access to other international facilities.

Qualifications

The following qualifications are expected:

- PhD in Physics, Materials Science, Engineering or related disciplines
- Proven knowledge of complex instrumentation for surface science methods in UHV environment and synchrotron radiation beamline operation.

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- Good oral and written communication skills in English and in Italian.

The following qualifications will be considered as useful assets (when proven by a suitable publication record):

- At least 3 years of experience in nanoscience/nanotechnology after the PhD, with research conducted in international research centers.
- Good knowledge of research infrastructures hosting multidisciplinary laboratories and electron accelerator sources.
- Experience in operating at research infrastructures including fulfilling the role of local contact for users' experiments.
- Documented experience in X-ray spectroscopies with synchrotron radiation, and in particular with electron spectroscopies based on synchrotron radiation as XMCD, XAS, XPS in the soft and hard X-ray energy range.
- Experience in the growth of thin films with physical methods, e.g., PVD, MBE or PLD.
- Experience in materials characterization with laboratory techniques e.g., LEED, RHEED, XRD, SEM, etc.
- Experience with magnetic characterization of solids with MOKE, SQUID and XMCD.
- Experience in the study of itinerant ferromagnets, ferroelectrics, functional oxides.
- Knowledge of interface-related phenomena.

Good time management skills and ability to prioritize are expected, together with the ability to interact with international project partners and work as part of a multidisciplinary team.

General information

The appointment will be a fixed-term employment contract of a duration of 24 months, starting on 1st January 2026. The salary will be commensurate with previous experience and qualifications of the candidate.

Applications should include full curriculum vitae, and contact information (including electronic mail) of at least two references.

The interviews could be performed through video conferencing.

The ranking of suitable candidates resulting from this selection process may be used within the following 24 months.

Employees or former employees of Elettra Sincrotrone Trieste S.C.p.A. or temporary and staff leasing employees or former employees with working experience at the company will be excluded from the present selection procedure. 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 also 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.

The deadline for the submission of the application is September 25, 2025.

For more information, please contact Giorgio Rossi (email: giorgio.rossi2@unimi.it) and Giancarlo Panaccione (email giancarlo.panaccione@elettra.eu)

We thank all applicants in advance.

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To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?id=4265>

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