



Elettra Sincrotrone Trieste

Postdoctoral Research Associate at Spectromicroscopy

Deadline: 30 April 2023

Ref: DB/23/9

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

Unique among the VUV/x-ray facilities at Elettra, the Spectromicroscopy beamline operates in the 20-300 eV photon energy range and hosts a low photon energy, scanning-stage, angle-resolved photoemission microscope. Research is mainly carried out in the fields of materials science and solid state physics, focusing in particular on the electronic structure of layered micro- and nanomaterials and high temperature superconductors.

See <http://www.elettra.eu/elettra-beamlines/Spectromicroscopy.html> for more information

Job description

The successful candidate will perform research addressing subjects related to the electronic properties of graphene, 2D materials and their heterostructures, high T_c superconductors, *etc.* He/she will contribute to the operation, maintenance and upgrade of the Spectromicroscopy beamline and its end station, as well as to the definition and execution of the in-house research activities. It is expected and encouraged that the candidate collaborates with the users of the beamline in a variety of research projects.

Qualifications

A Ph.D. in Physics, Chemistry or a related discipline is required. The candidate must not have more than 6-years of total postdoctoral experience, in academic institutions or private companies. Applications will be considered also from candidates who have completed a doctoral course of studies and for whom the defense has been scheduled. In any case, the Ph.D. must be awarded by the end of April 2023.

Proven experience in at least one of the following techniques is required:

- photoelectron spectroscopy and/or microscopy;
- angle-resolved photoemission spectroscopy and/or microscopy for the study of the electronic structure of materials.

The following qualifications will be considered as additional assets:

- Previous participation in experiments at synchrotron radiation facilities
- Experience in surface science techniques for surface analysis
- Experience in 2D material exfoliation and nano-manipulation

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

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- Experience in the operation and construction of scientific equipment relevant to UHV systems or for synchrotron beamlines
- Programming skills in LabView and/or Igor Pro, with demonstrated ability in data processing

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

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

The appointment will be a fixed term contract with an initial duration of 12 months. The salary will be commensurate with previous experience and qualifications of the candidate.

Depending on the evolution of the COVID-19 pandemic, the interviews may be held via video conferencing.

The deadline for the submission of the application is April 30, 2023.

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 Alexey Barinov (email: alexey.barinov@elettra.eu).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?id=3041>

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