



Elettra Sincrotrone Trieste

Postdoctoral Research Associate at the MCX beamline

Deadline: 24 July 2022

Ref: DA/22/20

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 Materials Characterisation by X-ray diffraction (MCX) beamline allows us to perform a wide range of diffraction experiments on materials that are not single crystals: grazing angle diffraction and reflectivity, residual stress and texture analysis, phase identification and structural studies and kinetic studies. Systems that can be investigated vary from organic and inorganic powders and thin films, to thermally and/or mechanically modified surfaces of mechanic components, to polymers and in-situ processes. See <http://www.elettra.eu/elettra-beamlines/mcx.html> for more information.

Job description

The successful candidate will contribute to the operation, optimization, maintenance and upgrade of the MCX beamline and experimental station in order to meet the requirements of a large scientific community of material scientists. He/she is expected to provide high-quality support to external users and be involved in proprietary research in collaboration with industry. He/she will participate in the scientific activities as well as in the design and implementation of the technical developments of the beamline.

He/she is also expected to be involved in submitting proposals to suitable funding agencies and establish new research collaborations.

Qualifications

A PhD in Physics, Chemistry or a related discipline is required, together with documented research activity and a suitable publication record in materials science. The successful candidate is expected to be experienced in powder diffraction and structural characterization of materials. Knowledge of the methods and software used for structure determination via X-ray diffraction is essential.

Experience in the design, implementation, commissioning and operation of instrumentation is desirable.

Programming skills in some of the most common languages (e.g., Python, LabView, C++) and experience with other hard X-ray based techniques (e.g., single crystal diffraction, fluorescence) will be considered an asset.

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 multidisciplinary team. Good oral and written communication skills in English are essential, while a working knowledge of the Italian language would be desirable, but is not required.

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

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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.

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 July 24, 2022.

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 Jasper Rikkert Plaisier (email: jasper.plaisier@elettra.eu).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?id=2601>

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