



Elettra Sincrotrone Trieste

Postdoctoral Research Associates for Experimental and Theoretical X-ray spectroscopy studies of molecular chirality in solution within the CHIRAX ERC grant (# of positions: 3)

Deadline: 25 October 2023

Ref: DB/23/32

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 CHIRAX project funded by the European Research Council aims at implementing steady-state and time-resolved X-ray spectroscopy of chiral molecules in solution using circular and helical dichroism. The steady-state part will be carried out at synchrotrons, while the time-resolved ones will exploit both synchrotrons and XFELs.

Job description

Implementation of a flat liquid jet for soft X-ray absorption spectroscopy. Implementation of steady-state and time-resolved soft X-ray Circular Dichroism experiments. Development of theoretical models for X-ray spectroscopy of chiral systems. Analysis of results, write-up of reports and papers, presentation at conferences and workshops.

Qualifications

A Ph.D. in Physics or related discipline with specific expertise in laser and/or X-ray spectroscopy is required. The candidate should have earned his/her Ph.D. no more than 6 years ago.

Applications will be considered also from candidates who have completed a doctoral course of studies and for whom the defense has been scheduled, before the end of March 2024.

The following qualifications are considered as positive assets:

- Previous participation in experimental campaigns at FELs and/or synchrotrons
- Experience with flat liquid jets under vacuum
- Laser laboratory expertise
- Experience in data processing or simulations.
- Experience in the theory of X-ray spectra and/or molecular systems

The successful candidates should possess strong personal skills favoring collaborative research programs in a team-oriented environment.

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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.

The appointment will be a fixed term contract with an initial duration of 12 months, renewable upon agreement by the parties, starting no later than May, 2024.

The salary will be commensurate with previous experience and qualifications of the candidate.

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 interviews may be held via video conferencing.

The deadline for the submission of the application is October 25, 2023.

For further information please contact Prof. Majed Chergui: majed.chergui@elettra.eu ; majed.chergui@epfl.ch

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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=3441>

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