



Elettra Sincrotrone Trieste

Postdoctoral Research Associate position at the MagneDyn beamline

Deadline: 21 October 2020

Ref: DB/20/35

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

The MagneDyn beamline at FERMI enables experimental access to the transient magnetic states of matter, opening unprecedented opportunities in the fields of femtomagnetism, spintronics, strongly electron and magnetic correlated systems, carbon based materials. The beamline exploits the time structure, full coherence, variable polarization and harmonic content/multi-color operation of the FERMI FEL source. The most prominent techniques that are available are magneto core level Kerr effect and core level elastic/inelastic scattering. Pump-and-probe experiments are carried out using the FEL alone or in combination with a synchronized optical laser - the FERMI seed laser for users (SLU). These methods allow us studying the ultrafast magnetodynamics of the target system upon electronic and crystal excitations.

The MagneDyn beamline has been open to external user since 2018. Comprehensive information on the research activity carried out by the users and the local team can be found at:

<https://www.elettra.eu/lightsources/fermi/fermi-beamlines/magnedyn/magnedyn.html>

Job description

The successful candidate will work in close collaboration with the local team and the users, further developing the numerous experimental activities carried out at the beamline. She/He will be involved in operating the EUV-polarimeter and Resonant XES/IXS end-stations, which comprise a 2 Tesla magnet, an EUV-Wollaston polarimeter, the SLU sub-picosecond laser source and an XES spectrometer. She/he will assist users in preparing and running experiments, as well as analyzing data, and will take care of the beamline maintenance together with other members of the team. In addition, she/he will participate in the definition and realization of the in-house research activities on femto-magnetism and carbon-based materials. She/he is expected to actively contribute to the submission of project proposals to suitable funding agencies and to establish research collaborations with external groups.

Qualifications

A Ph.D. in Physics or a related discipline awarded within the previous 6 years is required. Applications will be considered also from candidates who have completed a doctoral course of studies and for whom the defence has been scheduled. In any case, the Ph.D. must be awarded by the end of December 2020.

A track record in either FEL or synchrotron experiments is essential.

Established knowledge of at least two of the following experimental, time-resolved techniques/methods are required, -:

1. experience and a suitable publication record in synchrotron/FEL based XAS/XES/RIXS spectroscopy in condensed matter physics.
2. Demonstrated ability in data processing, and in the analysis of large datasets.
3. proven publication record of femtosecond physics applied to materials

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

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4. Use and basic maintenance of pulsed laser systems

Any of the following qualifications will be considered an asset (please indicate relevant publications or thesis):

1. experience in the construction of scientific equipment relevant to MOKE setup, FEL beamlines and time-resolved experiments.
2. Participation in experimental campaigns at 3rd generation synchrotrons or FEL user facilities
3. Research experiences in the physics of magnetic materials
4. Programming skills in Python, Matlab

Good time management skills and ability to prioritize are expected, together with the ability to interact with 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. 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 two persons who have agreed to provide references.

The deadline for the submission of the application is October 21, 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 Marco Malvestuto (email: marco.malvestuto@elettra.eu).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?ref=DB%2F20%2F35>

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