



Elettra Sincrotrone Trieste

# Postdoctoral Research Associate position at the Gas Phase and LDM beamlines

Deadline: 30 October 2020

Ref: DB/20/34

## 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

Our laboratory is committed to performing outstanding research in the field of atomic and molecular physics and, to this purpose, operates two dedicated beamlines: Gas Phase at the Elettra storage ring and LDM at the FERMI free electron laser. They are devoted to complementary experiments using a multi-technique approach for the investigation of the electronic properties of free atoms, molecules, and clusters:

The Gas Phase beamline operates over a broad photon energy range (13-900 eV); the high resolving power and flux together with several special purpose end-stations, make it ideal for investigating the spectroscopy and dynamics of basic processes like inner-shell and multiple excitations and ionization, as well as for characterizing key processes relevant to several areas of science and technology (e.g. atmospheric chemistry, material science and biomedical sciences).

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

The LDM beamline exploits the unique capabilities of the FERMI source (high brilliance, coherence, variable-focusing optics) for time-resolved experiments, and the study of coherent dynamics. Its target systems are very dilute species (weakly-bound complexes, radicals, ions) and matter under extreme irradiation conditions (multiple excitation, non-linear optics).

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

The user community and the staff of both beamlines have a very strong record of publishing excellent results in high profile journals.

## Job description

The successful candidate will be involved in the study of organic molecules of increasing complexity, striving to increase the range of possible experiments by improving the sample sources and/or the detection efficiency. The work will be carried out in collaboration with the staff of the LDM and GasPhase beamlines. In addition, the successful candidate will assist users in preparing and running experiments, as well as analyzing data, and will contribute to the maintenance of the beamlines.

## Qualifications

A Ph.D. in Physics, Chemistry 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.

Experience in at least three of the following techniques/methods is required:

- Charged particle spectroscopy (photoelectron spectroscopy, mass spectrometry, ion/electron imaging)

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

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- Use and basic maintenance of charged particle detectors and related electronics
- Use and basic maintenance of UHV vacuum systems compatible with the delivery of gaseous samples
- Use and basic maintenance of pulsed laser systems
- Demonstrated ability in data processing, and in the analysis of large datasets.

Demonstrated ability in performing independent work in a group-oriented research environment is expected.

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

- A track record in the field of Atomic and Molecular Physics, concerning in particular the study of organic molecules.
- Participation in experimental campaigns at Elettra/FERMI or other synchrotron/FEL user facilities
- Experience in pump-probe experiments
- Experience in charged particle optics
- Programming skills in Python, Matlab, and Labview, including interfacing of instruments
- Previous use and development of liquid jets, molecular beams, cluster or electrospray sources.

The successful candidate should possess strong personal skills to pursue collaborative research programs in a team-oriented environment and to become part of existing research collaborations.

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 three persons who have agreed to provide references.

The deadline for the submission of the application is October 30, 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 Carlo Callegari (email: [carlo.callegari@elettra.eu](mailto:carlo.callegari@elettra.eu)) or Robert Richter (email: [robert.richter@elettra.eu](mailto:robert.richter@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%2F34>

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