



Elettra Sincrotrone Trieste

# SISSI-Bio Postdoctoral Research Associate Position at Elettra

Deadline: 19 February 2021

Ref: DA/21/1

## 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 SISSI beamline at Elettra has been operating since 15 years in the application of infrared synchrotron radiation for Fourier Transform Infrared spectroscopy, microscopy and imaging in a variety of fields, from medical to materials science.

SISSI-Bio, the Chemical and Life Sciences branch of the SISSI beamline receives proposals mainly from the understanding of biochemical pathways responsible for disease onset, progression, diagnosis, prognosis and treatment, but new users from cultural heritage, chemistry and biophysics are also emerging.

In 2019, a new branch for FTIR nanoscopy equipped with an IR s-SNOM system has been installed. The SISSI-nano branch will be further implemented with the Photo-Thermal-Expansion acquisition method, for soft-matter studies and thin-film analysis, with the aim to further extend the range of applications of the beamline and improve its complementarity with nano-resolved characterization techniques, such as advanced Atomic Force Microscopy (AFM) for morpho-mechanical studies.

In this respect, synergies have been exploited between SISSI-Bio and the Elettra NanoInnovation Lab, a laboratory which applies nanotechnology and AFM in particular to biophysics and translational medicine open issues, spanning from nanoscale disease biomarkers (e.g. natural nanovesicles and circulating macromolecules), cell and tissue biomechanics to lipid-bilayer embedded protein receptors as plasma membrane model systems for signaling modulation studies.

## Job description

The successful candidate will collaborate with the SISSI-Bio beamline staff in the scientific activities and is expected to provide high-quality support to beamline users, from proposals preparation to experimental assistance during beamtime and data analysis. In particular, he/she is expected to foster biophysical studies at SISSI-Bio, focusing on nano-resolved infrared studies of bio-systems. The activity is foreseen in collaboration with the AFM NanoInnovation Laboratory at Elettra, with the aim to establish first a strong collaborative in-house research programme and then build a new user community for nano-resolved morpho-mechanical-vibrational studies.

Moreover, the candidate will support the beamline staff in the transition between Elettra and Elettra 2.0, being specifically involved in the optimization of the coupling of the IR s-SNOM system with the infrared synchrotron radiation instrumentation (IRSR).

## Qualifications

A PhD in Physics, Chemistry or related disciplines awarded within the last six years is required.

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 PhD must be awarded by the end of February 2021.

A biophysical background and proven experience on advanced infrared spectroscopy methods and AFM-based measurements are required. Hands-on experience on IR s-SNOM and PTE approaches will be considered a plus. Programming capabilities in Java, Matlab or Python and basic knowledge of LabVIEW will be considered positively.

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

S.S. 14 Km 163,5 in Area Science Park  
34149 Basovizza, Trieste, Italy  
T. +39 040 37581  
F. +39 040 938 0903

P.IVA e C.F. IT00697920320  
Cap. Soc. € 47.632.663,00 i.v.  
PEC: [sincrotrone.trieste.elettra@legalmail.it](mailto:sincrotrone.trieste.elettra@legalmail.it)  
[www.elettra.eu](http://www.elettra.eu)

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The 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 facility 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 individuals who have agreed to provide references.*

The deadline for the submission of the application is February 19, 2021.

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 Lisa Vaccari (email: [lisa.vaccari@elettra.eu](mailto:lisa.vaccari@elettra.eu)) or Loredana Casalis (email: [loredana.casalis@elettra.eu](mailto:loredana.casalis@elettra.eu)).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?ref=DA%2F21%2F1>

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