



Elettra Sincrotrone Trieste

Research Associate at the NanoESCA Beamline

Deadline: 15 November 2021

Ref: DB/21/28

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 NanoESCA undulator beamline delivers elliptically polarized photons in the energy range 25 - 1000 eV to an end-station equipped with a Photo-Emission Electron Microscope (PEEM). This instrument offers a wide range of complementary methods providing chemical and magnetic sensitivity with lateral resolution and accessing the band structure of the crystal under examination using the momentum resolved PEEM (k-PEEM) technique. The PEEM at the beamline is now equipped with a 2-dimensional spin polarimeter allowing acquiring spin-resolved images in both real and reciprocal space.

The research carried out at the beamline focuses on the electronic and magnetic properties of materials, covering the fields of surface science, surface chemistry, and magnetism. Experiments are performed exploiting the combination of different techniques based on photoemission spectroscopy and absorption spectroscopy. The end-station and beamline capabilities are constantly upgraded, in order to meet the most challenging experimental needs. Comprehensive information on these activities can be found at:

<http://www.elettra.eu/elettra-beamlines/nanoesca.html>

Job description

The successful candidate will be involved in the study of the electronic and magnetic properties of various metalorganic molecules deposited on metal substrates. The control of these properties will be achieved through the molecular surface reactions and functionalization of organic compounds with small gaseous molecules. The geometry and electronic structure of anchored molecules will be studied by means of photoemission tomography (PT) method using PEEM. The spin-resolved PT will be applied to monitor the spin state of adsorbed molecules. The research activity will be carried out in collaboration with the staff of the beamline. In addition, the successful candidate will assist users in running experiments, and contribute to the maintenance and upgrade of the beamline. The candidate is expected also to propose and carry out an independent research program.

Qualifications

A M.Sc. in Physics, Physical Chemistry or a related discipline is required together with proven experience in at least two of the following techniques (please indicate relevant publications or thesis):

- Photoemission electron microscopy
- Photoemission tomography using PEEM
- X-ray photoelectron spectroscopy

The following qualifications will be considered as additional assets:

- A research background in the study of metalorganic/metal interfaces, e.g., porphyrin, phthalocyanine
- A research background in the study of self-assembled monolayers and metal thin film growth

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

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- Proven experience in ARPES, in particular Photoemission tomography method
- Experience in spin resolved photoemission method and related data analysis
- Previous participation in experiments at synchrotron radiation facilities
- Programming skills in Igor Pro, with demonstrated ability in data processing

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 deadline for the submission of the application is November 15, 2021.

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 a 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.

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 Andrea Locatelli (email: andrea.locatelli@elettra.eu).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?id=2141>

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