

# Postdoctoral position for the Nano-Region Project at Elettra (CUP D99F18000030002)

Deadline: 30 September 2019

Ref: DB/19/26

## 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 technologic interest. See <http://www.elettra.eu> for more information.

## Beamline/Activity/Project description

Nano-Region is an Interreg Project (CUP D99F18000030002) aiming at the development of a network of research centers and parks promoting technology transfer with a nano-technological focus. The network will offer access to enabling technologies and will contribute to creating a new culture of innovation, through consulting services and feasibility studies, responding to the needs expressed by individual companies and stimulating the creation of new products, markets and companies. In the Nano-Region project the use of beamlines of Elettra, such as SAXS and DXRL is foreseen.

The Austrian SAXS beamline works at 3 discrete energies, namely 5.4, 8 and 16 keV (0.077, 0.154, 0.23 nm). A versatile SAXS/ GISAXS experimental station has been set-up, and an additional wide-angle X-ray scattering (WAXS) detector can monitor simultaneously diffraction patterns. At SAXS users have the possibility to install their own specialised sample equipment or to use the already available sample station. The SAXS group has a strong interest in selected topics in materials science, life sciences, physics and chemistry. See <http://www.elettra.trieste.it/elettra-beamlines/saxs.html> for more information.

The Deep X-Ray Lithography (DXRL) beamline, working with white beam, is used to create highly precise microstructures through the lithography manufacturing process using the high resolution, high intensity and extreme parallelism of the synchrotron radiation beam. Microstructures have been obtained with high spatial resolution (200 nm for a wall thickness of 100 µm), high aspect ratios (up to 40), great structural heights (up to 3mm) and parallel edges. Moreover, novel functional materials that change their properties under X-ray irradiation can be studied and employed for devices with improved performance. See <http://www.elettra.trieste.it/elettra-beamlines/dxrl.html> for more information.

## Job description

The successful candidate will design and fabricate microfluidic devices for time-resolved measurements, specifically tailored for SAXS characterization of chemical and biological reactions. This will imply working at both the DXRL beamline for the microfabrication of the devices and at the SAXS beamline for their characterization.

Part of the activity will be dedicated to support industrial partners interested in both techniques. The candidate should possess strong personal skills to work in an interdisciplinary environment with different techniques, should be willing to learn both the DXRL and SAXS techniques and to work in a team-oriented international group.

## Qualifications

A PhD in Physics, Engineering, Chemistry, Biology or a related field is required together with proven experience in the Small Angle Scattering and/or Lithography and microfabrication techniques. Experience in microfluidics will be a plus.

Good time management skills and ability to prioritize are expected, together with the ability to interact with industrial partners and to work as part of a multi-disciplinary team. Good oral and written communication skills in English are essential.

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The deadline for the submission of the application is September 30, 2019.

The appointment envisioned is a fixed term contract of an initial duration of 12 months.

Applications should include curriculum vitae, the names and contact information (including electronic mail) of at least one, possibly two, references.

We thank all applicants in advance.

For more information, please contact Sigrid Bernstorff (email: [sigrid.bernstorff@elettra.eu](mailto:sigrid.bernstorff@elettra.eu)) or Alessio Turchet (email: [alessio.turchet@elettra.eu](mailto:alessio.turchet@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%2F19%2F26>

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