



Elettra Sincrotrone Trieste

Postdoctoral Research Associate Position at the Laser Laboratory

Deadline: 15 March 2021

Ref: GA/21/2

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 FERMI FEL is based on the high-gain harmonic generation (HG) seeding scheme and strongly relies on the use of ultrafast laser systems for the generation of the electron bunches (photoinjector laser, or PIL), suppression of microbunching instabilities (laser heater, or LH), seeding by tunable UV light (seed laser, or SL) and pump-probe experiments at the user stations (pulses derived from the seed laser, or SLU). The Laser Laboratory team provides full operational support and implements continuous refinement and upgrades of these systems to support the FEL source improvements. For example an important SL upgrade is starting in relation with the implementation of the echo-enabled harmonic generation (EEHG) seeding scheme. The Laser Laboratory team is also actively involved in the preparation of user experiments when combined use of FEL and external laser pulses is needed.

Job description

The successful candidate will join the Laser Laboratory team and is expected to participate in all ongoing laser and nonlinear optics development activities. In particular he/she is expected to provide an important contribution to the rapid completion of the development and implementation of a setup for deep-UV ultrafast pulse measurements. The successful candidate will also join the work on the upgrade of the FERMI SL for generating and delivery of a second seed pulse in the EEHG scheme. In addition, he/she will join the work on extension of the capabilities of the set-ups for pump-probe type optical laser-FEL measurements at the FERMI end-stations, e.g., to extend the wavelength range and pulse duration through nonlinear processes.

Qualifications

A Ph.D. in Physics or Engineering obtained within the last three 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 Ph.D. must be awarded by the end of March 2021.

It is expected that successful candidate would have proven experience in the application of techniques for the complete characterization of ultrashort laser pulses, e.g., frequency resolved optical gating.

The following qualifications would be considered as additional assets (please indicate relevant publications or thesis in the specific field):

- A research background in the fields of lasers, ultrafast optics and/or nonlinear optics
- Use and basic maintenance of laser systems (in particular Ti:Sapphire, Yb-doped fibre or bulk) and complex optical setups.
- Familiarity with nonlinear/ultrafast optics software (open or commercial software)
- Programming skills in Python or Matlab, including interfacing of instruments

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

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The successful candidate should possess strong interpersonal 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 three individuals who have agreed to provide references.

The deadline for the submission of the application is March 15, 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 Miltcho Boyanov Danailov (email: miltcho.danailov@elettra.eu).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?id=1701>

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