



Elettra Sincrotrone Trieste

STAFF LINAC RF SYSTEMS ENGINEER/PHYSICIST

Deadline: 5 March 2020

Ref: CA/20/7

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

FERMI is a seeded Free Electron Laser (FEL) user-facility, located at the Elettra laboratory in Trieste, Italy. FERMI is driven by a 200 meter long S-band linac. Eighteen S-band accelerating sections powered by fifteen 3 GHz klystrons are installed. An X-band RF structure is also implemented. In order to extend the FEL spectral range to shorter wavelengths, a feasibility study for increasing the Linac energy from 1.5 GeV to 1.8 GeV is ongoing. The study implies the design and implementation of new S-band accelerating structures, intended to replace the present Backward Travelling Wave sections. Such design is tailored to high gradient operation, low breakdown rates and low wakefield contribution

Job description

The successful candidate will be part of the team responsible for the S-band systems of the FERMI linac in the various operational conditions of the machine, and for the developments and upgrades of the present S-band RF systems.

He/she will participate in all activities related to the S-band RF systems working closely in contact with the engineering and physics staff of FERMI. He /she should understand the accelerator physics involved and propose solutions suitable for the required application. He/she will participate in the operation of the facility from the control room to meet the needs of the user community and troubleshoot and maintain the present systems as required.

For the development and upgrade of the S-band systems, he/she is expected to contribute to the design of the new high-gradient accelerating structures and to the following validation tests and installations. He/she will contribute to all of the developments of the high power radiofrequency (RF) devices such as pulse compressors and waveguide for RF power transport.

He/she will be encouraged to develop and strengthen links with linac specialists from other facilities.

Qualifications

A Master degree in Electronics or Telecommunications Engineering or in Physics with qualified previous experience in high power RF systems for accelerators and in particular linear accelerators are required.

The position requires a proven track record in the following areas:

- design, construction and operation of RF devices such as accelerating structures and waveguides components operating at high pulsed power and high frequency;
- high power processing of RF components and accelerating structures;
- electromagnetic and thermo mechanical studies of RF accelerating structures and RF components for power transmission;
- electromagnetic and thermo-mechanical CAE software, such as HFSS, CST, Ansys Multiphysics.

Experience in the following areas will be considered an advantage:

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Società di interesse nazionale
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L. 19 ottobre 1999 n. 370





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- good knowledge of Matlab;
- familiarity with system engineering and quality management practice.

Good oral and written communication skills in English and the ability to work productively in a team are essential. A working knowledge of the Italian language is desirable, but is not required.

The deadline for the submission of the application is March 5, 2020.

The appointment envisioned is a permanent position. The salary will be commensurate with previous experience and qualifications of the candidate.

Applications should include a full curriculum vitae and the names and contact information (including electronic mail) of possible two references.

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.

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?ref=CA%2F20%2F7>

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