

Call for Candidates

Experienced Engineer in RF systems for Accelerators

The International Fusion Materials Irradiation Facility (IFMIF) aims at providing an accelerator-based neutron source at sufficient intensity and irradiation volume to simulate as closely as possible the neutron flux and spectrum irradiating the plasma facing components of future nuclear fusion reactors such, as DEMO and ensuing Power Plants. Neutrons peaking around 14 MeV will be generated through (d,Li) nuclear reactions originated by a 40 MeV deuteron beam impinging on a liquid Li screen. Neutron fluxes of about 10^{18} n/(m²·s) will be achieved through two parallel CW 125 mA Linacs that will deposit a beam power of 10 MW into the Li jet.

The validation of the accelerator concept of IFMIF/EVEDA is directed to the construction and operation of a 9 MeV Deuteron Linac capable to deliver 125 mA in continuous wave operation. Main subsystems of this 1.125 MW accelerator have been fabricated in European laboratories (INFN, CIEMAT and CEA) and are currently under installation at the Japanese site of Rokkasho dedicated to fusion research. Operation at intermediate energy have started in 2018, with the goal to achieve the nominal energy in 2020.

CEA is strongly involved in the projects of the Broader Approach agreement and is the major European contributor to the IFMIF/EVEDA project. Teams from CEA are in charge of the study, manufacturing and delivery of several sub-systems of the Linear IFMIF Prototype Accelerator (LIPAc), amongst others the deuteron Injector, a Low Energy Beam Transfer line and the SRF Linac.

The Department of Accelerators, Cryogenics and Magnetism (DACM) of the CEA-Saclay Institute of Research on the Fundamental laws of the Universe (IRFU) has an opening of a position for an experienced engineer in RF systems for Accelerators, related to this new phase of the LIPAc Installation and Commissioning (LIC) at Rokkasho. the selected candidate will:

- be assigned to the local LIC core team in charge of the operation of the accelerator
- be involved in the commissioning of the LIPAc RF systems including the LLRF
- perform RF calibrations and measurements in relation to the accelerator experiments
- check on the components of the 16 RF chains (of 100 and 200 kW)
- participate in the maintenance, diagnose and optimization of LIPAc components
- participate in the preparation and/or evolution of the documents related to the RF systems (control reports, procedures, analysis)

The candidate should hold a PhD or Engineer diploma in RF systems engineering. He/She has experience and skills in:

- study and operation of high power RF sources (RF amplifiers, LLRF, couplers, accelerating cavities)
- EM simulation software (COMSOL, HFSS, ...)
- commissioning of accelerators or equivalent scientific instrument
- written and spoken communication in French and in English
- work within international teams

The selected candidate will be appointed for 18 months with the possibility of extension. The position is based at Broader Approach site in Rokkasho-mura, Japan and will be preceded by a preparation phase of about two months at CEA-Saclay, France. An International School is available in Rokkasho to cover education of the family of foreign researchers of the Broader Approach Agreement.

Candidates are invited to submit a letter of application describing their activities and prospects, a curriculum vitae including a list of publications and presentation at conferences, and when applicable a copy of their engineer or PhD diploma by email to claude.marchand@cea.fr. Applicants are encouraged to also arrange to have at least one letter of recommendation sent to the same email address.

The deadline for applications is November 30, 2018.

