

Postdoc in experimentation and development of ion sources M/W -Réf 313

Application Deadline : 30 September 2023

General information

Reference : UAR3266-VERMAR-080 Number of position : 1 Workplace : CAEN Date of publication : 02 August 2023 Type of Contract : FTC Scientist Contract Period : 24 months Expected date of employment : 1 October 2023 Proportion of work : Full time Remuneration : between €2800 and €4000 gross depending on experience Desired level of education : Niveau 8 - (Doctorat) Experience required : 1 to 4 years Section(s) CN : Interactions, particles, nuclei, from laboratory to cosmos

Missions

As part of the operation and development of GANIL's ion sources, the person recruited will be responsible for identifying ways of developing and improving the stable beam production facilities in order to increase their performance and availability.

Activities

- Initiate new developments and carry out tests to increase the range of beams or improve the performance of GANIL's ion sources, including :

- Collaborate with CEA-IRFU to improve the availability of Proton-Deuteron ions source (magnetic and RF simulation)

- Introduce ways of monitoring and diagnosing the stability of online sources (in connection with EUROLABS-ERIBS project)

- Scientific assessment of optimization potential for existing installations (beam extraction calculation, source improvement, etc.)

- Develop existing collaborations with GANIL's partner laboratories, as well as new collaborations with new partners to reach these new developpement.

- Publish the results of developments in referred-reviewed journals.

- Taking part in the production of stable beams with the whole team according to the schedules of the various production facilities

- To specify, apply and maintain safety procedures and quality assurance procedures.

- Participate with GANIL team in development projects on ion source, like GANIL's existing and future injectors (NEWGAIN) and European projects of ion sources.

Skills

Area of expertise :

Engineering sciences (vacuum techniques, mechanics, electricity and electronics). Skills in vacuum, chemical reactions at high temperatures and high-voltage systems would be a plus.

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Skills:

- Knowledge of ionisation and evaporation processes, as well as beam transport.
- Project management skills (planning and organisation).
- Ability to write in French and English.
- Ability to work in a team.

Soft skills:

- Open to discussion
- Ability to work as part of a team,
- Creative, curious.
- Committed
- Thorough.

Work Context

The Grand Accélérateur National d'Ions Lourds is a national research infrastructure based on the use of ion beams. Its fields of research are fundamental research in nuclear physics and nuclear astrophysics, the study of materials under irradiation and nanostructuring, molecular collisions and the interstellar medium, radiobiology and innovative techniques for imaging and therapy of certain cancers. GANIL (about 290 people) is located in France, in the city of Caen, in Normandy. Le GANIL is located on the future site EPOPEA science and innovation park of the urban community Caen la Mer. It is managed jointly, within an Economic Interest Group (GIE) by the Commissariat à l'Energie Atomique (CEA/DRF) and by the Centre National de la Recherche Scientifique (CNRS/IN2P3). As a national research infrastructure, GANIL serves the national, European and international scientific community of about a thousand users.

The person recruited will involve operating and developing GANIL's 6 stable ion injectors, as part of the Source Target Group. The team is currently made up of technicians and engineers in charge of operating the injectors in the Operations and Development Division. Remuneration will be based on her professional experience. The person engaged by the CNRS will benefit from a number of holidays linked to the derogatory status of the GIE GANIL of the order of 53 days (32 CA and 21 JRTT) with a weekly work rate of 40 hours per week, i.e. 8:25 a.m. -5:10 p.m. with 45 minutes of meridian break, and benefits of social action for CNRS agents of GANIL.

Constraints and risks

As GANIL is classified as a Basic Nuclear Installation (BNI), the position is eligible for specific work constraints related to potential exposure to ionizing radiation. The person engaged must be authorized to work in a supervised and controlled area in compliance with the regulations and procedures applicable to nuclear security and safety. The position involves working from home on call and working of regular hours, for which compensation is provided in the form of time off.

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