

## **Postdoctoral Research Fellow in Experimental Nuclear Physics: LPC-Caen, France**

Type of post: Postdoctoral Fellowship in Experimental Nuclear Structure Physics

Starting date: 1 Sept 2024 and no later than 15 Dec 2024

Term of contract: 24 months

Contract: Fulltime

Salary: from € 2 934 per month (gross) according to experience

Experience: up to 3 years of postdoctoral experience with no more than one postdoctoral fellowship completed after PhD.

### **JOB DESCRIPTION:**

The postdoctoral fellow will be a member of the “Nuclear Structure” research team at LPC-Caen. The group’s work focusses on the structure of nuclei far from stability using direct reactions. The present position will support the group’s investigations of neutron-rich nuclei at the RIBF facility at RIKEN (Japan). In particular, the postdoctoral fellow will be a member of the STRASSE and SAMURAI collaborations. As such, they be involved in the commissioning of and first experiments with the STRASSE Si-strip vertex tracking system, as well as the experimental programme with the recently commissioned NEBULA-Plus fast neutron array at SAMURAI. Involvement in the development of a new large-scale scintillator array (HYPATIA) for in-beam gamma ray spectroscopy is also envisaged. The successful applicant will also be involved in the analysis and publication of data acquired in previous campaigns of experiments at the RIBF with the SAMURAI setup and/or with the HICARI Ge-array.

The duties of the postdoctoral fellow will be:

- Involvement in the testing, setting up, commissioning and first experiments with STRASSE.
- Involvement in the experimental programme at SAMURAI employing the NEBULA-Plus neutron array, possibly in combination with STRASSE.
- Involvement in the development (testing and simulations) of a new scintillator array (HYPATIA) for in-beam gamma ray spectroscopy and its integration with STRASSE.
- To undertake the analysis of elements of the STRASSE commissioning data as well as data acquired in previous experiments aimed at exploring the structure neutron-rich nuclei with SAMURAI and/or the HICARI Ge array. The interpretation and publication of the results of this work is expected.
- Depending on the scheduling of experiments at the RIBF, involvement in experiments led by other teams within the SAMURAI and STRASSE collaborations is expected.

### **SKILLS AND BACKGROUND:**

The successful applicant is expected to have a solid background in experimental nuclear physics (including a PhD in the field), ideally with experience in the study of nuclear structure. Experience with scintillator detectors for gamma-ray detection and/or fast neutron detectors is highly desirable, as is knowledge of Si-strip detector systems. Hands on experience with the electronics associated with state-of-the-art nuclear physics experiments is also expected. The handling and analysis of complex data sets, including

the use of the ROOT analysis tool would be considered an asset. Similarly, experience with simulations (including knowledge of the GEANT4 package) would be desirable as are skills in programming in C++ and related languages.

The successful applicant should be able to work in an international environment, such as the STRASSE and SAMURAI collaborations. The applicant will also be expected to take on responsibilities with the experiments and the analysis work and should be able to work, when needed, independently.

Proficiency in English is essential. Knowledge of French would be an asset.

#### WORKPLACE:

The position will be held within the “Nuclear Structure” research group which is currently composed of 5 CNRS scientists, 2 university lecturers and 2 PhD students. The group is part of the LPC-Caen (“Laboratoire de Physique Corpusculaire de Caen” – [www.lpc-caen.in2p3.fr](http://www.lpc-caen.in2p3.fr)). The laboratory comprises some 100 staff (scientists and technical support) and students and is supported by the IN2P3/CNRS, the ENSICAEN engineering school (“l’Ecole Nationale Supérieure d’Ingénieurs de Caen”) and the “Université de Caen Normandie”. The laboratory is situated on the “Campus 2” of the university north of the city centre, in close proximity to the GANIL laboratory.

The postdoctoral fellow will be expected to undertake international travel, in particular to Japan, for periods varying from some 1 to 4 weeks. During experiments shift work and working on weekends may be necessary. The experiments will be carried out at accelerator facilities whereby the necessary authorisations will be attributed following a medical examination arranged by the laboratory.

#### APPLICATIONS:

Applications should include: a letter of motivation, a CV, a list of publications and two letters of reference.

Only applications made via the CNRS Employment platform will be accepted:

<https://emploi.cnrs.fr/Offres/CDD/UMR6534-AURGON-034/Default.aspx?lang=EN>

The closing date for applications is 30 June 2024. Interviews may begin before this date.

Inquiries regarding the position may be made to Nigel Orr - [orr@lpccaen.in2p3.fr](mailto:orr@lpccaen.in2p3.fr) and Freddy Flavigny - [flavigny@lpccaen.in2p3.fr](mailto:flavigny@lpccaen.in2p3.fr)