Post-doctoral fellow in experimental nuclear physics

Workplace: LP2i Bordeaux, France
Duration of the contract: 24 months
Expected starting date of the contract: January 2026
Contact: Beatriz Jurado (jurado@cenbg.in2p3.fr)

Context:

This post-doctoral position is funded by the ERC-Advanced grant NECTAR (Nuclear rEaCTions At storage Rings, https://www.lp2ib.in2p3.fr/nucleaire/nex/erc-nectar/). The aim of NECTAR is to determine neutron-induced reaction cross sections of radioactive nuclei. These cross sections are essential to understand the synthesis of heavy elements in stars and for applications. However, the difficulties to produce and manipulate the necessary amounts of radioactive nuclei make the direct measurement of such cross sections extremely difficult or even impossible. Surrogate reactions in inverse kinematics represent one of the most promising indirect approaches to determine these cross sections. The goal of NECTAR is to combine for the first time surrogate reactions with the ESR heavy-ion storage ring of the GSI/FAIR facility in Germany, which offers the ideal conditions for the study of this type of reactions. The first two NECTAR experiments successfully conducted in 2022 and 2024 have shown the significant advantages of this combination (see Sguazzin et al. Phys. Rev. Lett. 134, 072501 (2025) and Phys. Rev. C 111, 024614 (2025)).

Objectives:

The candidate will work together with the scientists and the engineers from the LP2iB laboratory (Laboratoire de Physique des deux Infinis de Bordeaux) and GSI/FAIR in the preparation and the realization of our next experiment at the ESR, as well as in the analysis and interpretation of the data measured in our last experiment. The candidate will contribute to designing, mounting and testing different detection systems for our new reaction chamber, ensuring their compatibility with the ultra-high vacuum conditions of the ESR. The candidate will present our work at international conferences and will coordinate the writing of scientific articles describing the experiments and the results. Finally, the candidate will participate to the supervision of PhD, master and undergraduate students.

Skills:

-PhD in experimental nuclear physics.
-Experience in detector development, vacuum techniques and data acquisition systems.
-Experience with programming languages such as Python and C++, as well as with the ROOT data analysis program.
-Strong interest in nuclear reactions.
-Good communication skills and a good command of spoken and written English.

Working conditions:

The person recruited will work at the LP2iB, which is a mixed unit composed of staff from the Centre National de Recherche Scientifique (CNRS) and the University of Bordeaux. Frequent travel to GSI/FAIR in Darmstadt, Germany, is to be foreseen, with stays of several weeks to several months. The working hours are those of LP2iB and GSI, except in exceptional cases, for example during experiments.

Interested candidates should send their application before the 10 November 2025 via this link:

https://emploi.cnrs.fr/Offres/CDD/UMR5797-STEGUE-027/Default.aspx?lang=EN

In a later stage, selected candidates will be asked to provide two reference letters.