



## Post-Doctoral Position in Experimental Nuclear Physics

**Start:** 1<sup>st</sup> January 2021

**Duration:** 36 months

**Contact:** Beatriz Jurado (jurado@cenbg.in2p3.fr)

### Context:

This post-doctoral position is funded by the ERC-Advanced grant NECTAR (PI: Beatriz Jurado). The aim of NECTAR (Nuclear rEaCTions At storage Rings) is to indirectly measure neutron-induced reaction cross sections of radioactive nuclei at the storage rings of the GSI/FAIR facility. 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 measurement of such cross sections extremely difficult or even impossible. Surrogate reactions in inverse kinematics represent the most promising indirect approach to determine these cross sections. Our aim is to combine for the first time surrogate reactions with the unique possibilities at heavy-ion storage rings.

### Objectives:

- Development of new set-ups for the study of surrogate reactions at the ESR and CRYRING storage rings of GSI/FAIR.
- Assembly and realization of the first experiments.
- Contribution to the data analysis and the interpretation of the results.

### Tasks:

The candidate will work together with the scientists and the engineers from the CENBG laboratory and GSI/FAIR in the preparation and the realization of the experiments. She/He will contribute to designing, mounting and testing different detection systems. She/He will work in the definition and assembly of sophisticated vacuum systems to ensure the compatibility with the ultra-high vacuum conditions of the storage rings. The candidate will also take part in the preparation of the readout electronics and the data acquisition system. Finally, the candidate will participate to the supervision of a PhD student in the analysis of the data and their interpretation.

### Skills:

- PhD in experimental nuclear physics or particle physics.
- Strong interest in detector development, vacuum techniques and data acquisition systems.
- Confirmed expertise in detector development, electronics and computer programming for data acquisition would be highly appreciated.
- Good communication skills and a good command of spoken and written English.

### Working conditions:

Frequent trips to GSI in Darmstadt, Germany, with stays of several weeks up to months. Regulatory working hours of CENBG and GSI except in exceptional cases, e.g. experiments.

**Place of work:** CENBG, Bordeaux, France

**Interested candidates should send their application before the 11<sup>th</sup> November 2020 via this link:** <https://emploi.cnrs.fr/Offres/CDD/UMR5797-JERBAU-037/Default.aspx?lang=EN>.