

## **Junior Researcher**

at the **Extreme Light Infrastructure – Nuclear Physics (ELI-NP)**

**Research Activity 4** – Nuclear Physics and Applications with High-Brilliance Gamma Beams

*Photo-fission Experiments*

### **Job Description and Candidate's Profile**

#### **Scope of Work**

In the implementation phase of ELI-NP, the junior researcher will participate in the implementation of the Gamma Beam System (GBS) Technical Design Report (TDR) 3: "Photo-fission experiments at ELI-NP", Rom. Rep. Phys. 68 (2016) S621, and in the preparation of the photo-fission experimental program at ELI-NP.

In the operational phase, the junior researcher will ensure the optimal operation of the photo-fission experimental setups within Research Activity 4, will participate to their upgrades and to the development of new experimental setups and will prepare and support experiments within the photo-fission experimental program at ELI-NP.

#### **Main responsibilities:**

In the implementation phase:

- Participating to the detector and equipment tests and the implementation of the ELITHGEM and ELI-BIC detector arrays;
- Preparing and participating in preparatory experiments for the ELI-NP research program.

In the operational phase:

- Maintaining the performance and the optimal use of the equipment;
- Participating to the upgrades of existing equipment and the development of new experimental setups;
- Participating in the research activities performed at ELI-NP, and mainly Research Activity 4.
- Taking active part in the photo-fission experimental program at ELI-NP.

#### **Main tasks:**

- Building and commissioning the equipment for the implementation of the GBS TDR3 within ELI-NP Research Activity 4;
- Testing, tuning and debugging electronics for radiation detectors, participation in the implementation and testing of the data acquisition system and the data-filtering algorithms needed for the ELI-BIC and ELITHGEM arrays;
- Providing support in the installation and commissioning of various systems and equipment for the ELI-BIC and ELITHGEM arrays and their further use;
- Participating in maintaining the performances of the ELI-BIC and ELITHGEM equipment and systems to the desired level;
- Participate in the development of upgrades of the existing equipment and in the design and the construction of new experimental set-ups;
- Actively participating in the different activities performed at ELI-NP;
- Proposing, preparing and performing experiments related to the ELI-NP photo-fission research program;
- Participating in the analysis, presentation and publication of the results of the experiments.

#### **Professional background:**

- PhD degree in Physics;
- Publication record in nuclear structure, nuclear reaction or nuclear fission physics;

- Experience in nuclear spectroscopy with multi-detector arrays;
- Expertise in analogue and digital electronics, analogue and digital signal processing;
- Excellent programming skills in C/C++;
- Windows and Linux proficiency;
- Fluency in English, both written and spoken;
- Goal-oriented attitude;
- Willingness to continuously improve and develop new skills;
- Proven teamwork experience, communication and efficient collaboration skills;
- Availability to travel and perform work stages abroad.

**Would be a plus, but at least one required:**

- Programming: GEANT4, LabVIEW;
- Data analysis: ROOT.

**Working arrangements/Conditions of employment:**

- Full time position, based in Bucharest - Magurele, Romania;
- Included: private medical coverage, paid annual leave;
- Motivating salary, at European level, based on qualifications and experience;
- The candidate should be available to travel abroad for scientific collaboration at various research infrastructures, for part of their time.

**Applications:**

The applications shall be accompanied by the documents requested in the Rules of Selection for these positions.

The applications shall be sent to the Human Resources Department at [human.resources@eli-np.ro](mailto:human.resources@eli-np.ro)