

GSI Helmholtzzentrum für Schwerionenforschung in Darmstadt operates one of the leading particle accelerators for science. In the next few years, the new FAIR (**F**acility for **A**ntiproton and **I**on **R**esearch) one of the world's largest research projects, will be built in international cooperation. GSI and FAIR offer the opportunity to work in this international environment with a team of employees committed to ensuring each day to conduct world-class science.

The FRS/SFRS group is one of the major partners for nuclear physics experiments and application of radioactive beams at GSI. The group operates and maintains the fragment separator FRS, a separator and spectrometer for heavy-ion and exotic nuclear beam experiments, and it supports the development and preparation of the super-conducting fragment separator Super-FRS of the international accelerator facility FAIR. At both instruments, short-lived exotic nuclei are produced, separated and thermalized for precision experiments of their ground state properties. The key device for this are the cryogenic stopping cells at the FRS and Super-FRS. The FRS/SFRS group is integral part of large international scientific collaborations and performs experiments at the cutting edge of modern nuclear science.

The **FRS/SFRS group** offers a position for a

**Postdoctoral researcher (d/f/m)  
Darmstadt, Germany**

**Ref.: [NUSTAR/Postdoc2021]**

**The position:**

- The candidate will conduct research with thermalized spontaneous fission products at the FRS Ion Catcher and will be integrated in collaborative activities of the FRS/SFRS group and the FRS Ion Catcher Collaboration.
- This project is part of the IAEA coordinated research project "New Experimental Method for Measuring Isotopic Fission Yields and Isomer Yield Ratios Based on Mass Measurements", which aims at the research and development of a new direct method to measure fission product isotopic yield distributions (FPY) and isomeric yield ratios (IYR). Fission fragments are generated and thermalized in the cryogenic stopping cell (CSC). Then, they are extracted and transported to a multiple-reflection time-of-flight mass-spectrometer (MR-TOF-MS), where they are identified and counted. The short measurement times enable direct measurements of independent fission yields down to half-lives of a few ten milliseconds. The candidate will implement and validate the method. As part of this a further improvement of the buffer gas cleanliness in the FRS Ion Catcher will be an important technical task. The candidate should publish first results.
- English is the main working language.

**Requirements:**

- PhD in the field of experimental nuclear physics, particle or high energy physics
- Experience in low energy ion trapping and manipulation techniques using e.g. radiofrequency (RFQ) ion traps
- Experience in mass spectrometry and related techniques
- Ability to work systematically and independently, as well as in a team
- Excellent oral and written communication skills
- Experience with LabView or analog electronics would be welcome

**Working location:**

Most of the work will be located at GSI Helmholtz Center of Heavy Ion Research GmbH however, the recruited postdoc may have opportunities to interact and work also partially at Justus-Liebig-University in Gießen.

**We offer** a fixed-term 2-year postdoctoral fellowship position with an attractive fellowship of up to 2.250 €, provided all conditions effective at GSI are satisfied.

Inquiries concerning the position can be sent to Dr. Timo Dickel (t.dickel@gsi.de).

Please send your complete application, which includes a recent CV with publication list and a copy of the PhD Degree, other educations certificates and recommendation letters (if any) using the above posting reference by **15 July 2021** per e-mail to:

t.dickel@gsi.de