

2017 HGF – GSI – OCPC – Programme

for the involvement of postdocs in bilateral collaboration projects

Part A:

Title of the project:

Direct Reactions at Internal Targets of Storage Rings

Helmholtz Centre and institute:

GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt

Project leader:

Prof. Dr. Peter Egelhof

E-Mail: p.egelhof@gsi.de Tel.: +49 6159 712662 FAX: +49 6159 712809

Web-address:

www.gsi.de

Department: (at the Helmholtz centre or Institute)

Kernreaktionen/NUSTAR

Contact Information:

Dr. Pradeep Ghosh

Program Coordinator

GSI Helmholtzzentrum für Schwerionenforschung

Planckstrasse 1, 64291 Darmstadt

Email: Pr.Ghosh@gsi.de or Pradeep.Ghosh@fair-center.eu

Telephone: +49 – 6159 71 3257, Fax: +49 – 6159 71 3916

Description of the project (max. 1 page):

The present project is intended to be part of the research project “EXL (Exotic nuclei studied in Light-ion induced reactions at storage rings) at GSI and at FAIR”, and the research project “Direct Reactions at Storage Rings” at the IMP Lanzhou. The aim of both research projects is to investigate direct nuclear reactions with stored and cooled radioactive beams, interacting with thin internal targets in order to deduce nuclear structure information on the exotic nuclei involved. The speciality of this novel experimental method is, among others, the access to reactions at very low momentum transfer due to the thin internal targets, and to gain luminosity due to the recirculation of the stored beams. This powerful new method, which was already demonstrated in pilot experiments to work very well, and which has a big potential for future investigations, turned out to be very challenging because the experimental setup needs to fulfil the demanding requirements for operation in the ultrahigh vacuum of storage rings.

Having in mind that GSI and IMP are presently the only facilities world - wide with running storage rings for nuclear physics experiments, a collaboration of both institutes, which was started already some years ago, is obvious and promising.

For the present project it is planned that a young postdoc joins our research group at GSI and that

he will be involved in:

1. further R&D in detector development, and preparation of the experimental setup for an upcoming experiment at GSI
2. preparation and test of an experimental setup which should be used for experiments at the IMP within the frame of an accepted common proposal
3. participation in experiments foreseen at GSI and IMP

Description of existing or sought Chinese collaboration partner institute (max. half page):

As Chinese collaboration partner institute we intend to choose the IMP Lanzhou, China. With this institute there exists already an intense collaboration on several research topics in atomic and nuclear physics with several research groups of GSI and IMP involved. Moreover IMP is the only laboratory world - wide except GSI, where storage rings are operated with stable and radioactive beams and are available for nuclear reaction experiments.

For a more detailed description of the IMP Lanzhou we refer to the homepage <http://english.imp.cas.cn> .

Required qualification of the post-doc:

- PhD in experimental nuclear physics
- Experience with nuclear physics experiments
- Additional skills in nuclear reaction experiments and radiation detectors are desired, but not definitely required
- Language requirement: English

Part B:

Documents to be provided by the post-doc:

- Detailed description of the interest in joining the project (motivation letter)
- Curriculum vitae (CV)
- copies of degrees as a proof of education qualification
- List of publications (if any)
- 2 letters of recommendation

Part C:

Additional requirements to be fulfilled by the post-doc:

- PhD degree not older than 5 years
- Very good command of the English language
- Strong ability to work independently and in a team