

# Call for 2016 GSI-ONACPR Fellowship Applicants

**Research Laboratory:** GSI Helmholzzentrum für Schwerionenforschung GmbH

**Division/Group:** Operations/Decelerator (HITRAP)

**Supervising scientist:** Dr. Frank Herfurth

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**Research Field:** Ion Traps, Atomic Physics

**Position:** Postdoctoral Research in Ion Trapping

**Research Area:**

The aim is to develop novel trapping and cooling techniques for highly charged ions. HITRAP is a linear decelerator including a Penning trap for deceleration and cooling of heavy, highly charged ions. After deceleration, the ions need to be caught in flight in a Penning trap, cooled with electrons and resistively before they are sent to experiments. Large bunches of HCl and electrons have to be stored at the same time, overlapped and subsequently ejected. The questions to be answered are how to describe the cooling process, which cooling scheme is best suited at which point and why. Along the way there will also be investigations of charge exchange cross sections, storage and life time measurements as well as their optimization.

**Specific Requirements:**

- Previous experience in at least three of the following fields: atomic physics, ion trapping, ion sources and beamlines, electronics, vacuum technique.
- A proven ability to devise, implement and work with hands-on experimental equipment
- Interest or demonstrated expertise in cryogenic technology
- A good knowledge or the ability to learn in the fields of ion optics, simulations of low energy beams and clouds, and computer control.
- At least basic programming knowledge (preferable C++, and/or LabView)
- Previous engineering and CAD knowledge and/or experience is advantageous, but not a necessity
- Experience in documenting the ongoing work and results
- Team work and good communication skills

**Work Place:** Darmstadt

**Earliest Start:** December 2016

**Language Requirement:** English, fluently spoken, ability to write scientific documentation.

**Further Remarks:** (none)