

### Summary Table

Field	Notes
<b>Device Name</b>	FRS Ion Catcher
<b>Document Version</b>	V1
<b>PID:</b>	<a href="https://doi.org/10.15120/GSI-2024-00534">10.15120/GSI-2024-00534</a>
<b>Author(s)</b>	Timo Dickel ORCID ( <a href="https://orcid.org/0000-0002-5965-8689">https://orcid.org/0000-0002-5965-8689</a> )
<b>Collaboration</b>	Mainly, but not exclusively Super-FRS EC
<b>Host Laboratory/Laboratories</b>	GSI: <a href="https://ror.org/02k8cbn47">https://ror.org/02k8cbn47</a>
<b>Responsible departments</b>	FRS/SFRS Experimente
<b>Years active</b>	2010/01 - present
<b>Stations(s) of device during primary usage</b>	FRS – HFS (S4)
<b>Linked infrastructure</b>	FRS, SIS18
<b>Device URL/Webpage</b>	<a href="https://www-windows.gsi.de/frs-ion-catcher/">https://www-windows.gsi.de/frs-ion-catcher/</a>
<b>References</b>	<a href="#">W.R. Plass et al. NIMB 317, 457-462 (2013)</a>
<b>3<sup>rd</sup> Party Funding</b>	

# FRS Ion Catcher

**Document version:** v1

**PID:** [10.15120/GSI-2024-00534](https://doi.org/10.15120/GSI-2024-00534)

**Author:**

Timo Dickel [ORCID (<https://orcid.org/0000-0002-5965-8689>)

**Collaboration:**

Mainly, but not exclusively Super-FRS EC

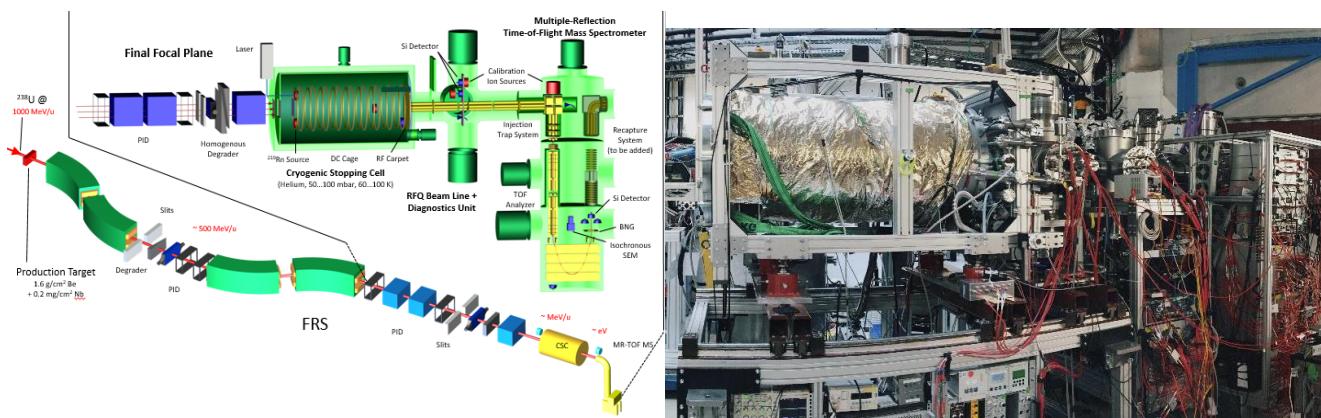
**Host Laboratory/Laboratories:**

GSI Helmholtz Centre for Heavy Ion Research [ROR: <https://ror.org/02k8cbn47>]

**Years active:**

2010 – present

**Diagram/Photo/CAD:**



*Left: schematic of the setup. Right: Photograph of system at the final focal plane of the FRS, in the photo degrader system and downstream detectors before the CSC are missing, they also belong to the setup.*

**Station(s) of device during primary usage:**

FRS HFS S4

**Linked infrastructure:**

SIS18, FRS

**Device Webpage:**

<https://www-windows.gsi.de/frs-ion-catcher/>

**Description:**

The FRS Ion Catcher is a set up which slows down exotic nuclei produced with high energies to perform high precision measurements almost at rest. The properties of the exotic isotopes help to study the structure of the nuclei or the origin of the elements in the universe. The setup is located at the fragment separator (FRS) of the GSI Helmholtz Centre for Heavy Ion Research in Darmstadt, Germany. The setup has been designed in collaboration with international partners, e.g. KVI-CART Groningen, Justus-Liebig-University Giessen, Germany. The FRS Ion Catcher consist in a cryogenic stopping cell, an RFQ based beamline with improved capabilities and a Multiple-Reflection time-of-flight Mass Spectrometer (MR-TOF-MS). More details can be found in [1, 2].

1. [W.R. Plass et al. NIMB 317, 457-462 \(2013\)](https://www-windws.gsi.de/nimb-317-457-462-2013.pdf)
2. <https://www-windws.gsi.de/frs-ion-catcher/>