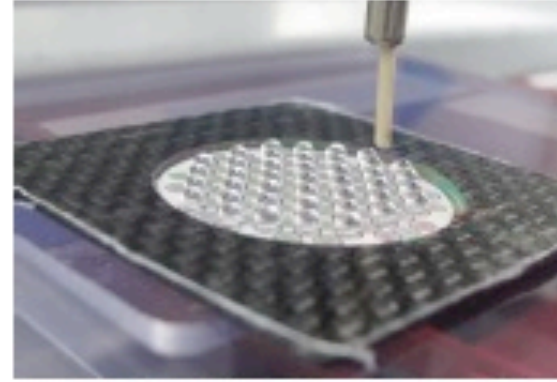


PSI Center for Nuclear Engineering
and Sciences

WP3: Isotope and target supply



**Horizon Europe
2021-2027**



Rugard Dressler
APRENDE Kickoff meeting, Madrid, 15.-17.10.2023

WP3 description summary

Focus of WP3:

- Ensure the in-time and high-quality delivery of the targets needed in WP2.
- Foster the target maker network in Europe and world-wide.
- Build-up of a dedicated isotope separator.
- Contribute to the strategic analysis of EURATOM nuclear data capacities.

WP and Task leader

PSI (9 PM), in collaboration with JRC, NPL and the directors of INTDS

Deliverables

D3.1 Report on targets produced for WP1 and WP2	Month 36
D3.2 Report on INTDS conferences	Month 36
D3.3 Report on the installation of the isotope separator at PSI	Month 48

Milestones

MS3.1 Approval of the proposal to the SNSF for financing half of the isotope separator	Month 4
MS3.2 Status report of target manufacturing	Month 24
MS3.3 Ordering of isotope separator components	Month 36

Task 3.1

Target supply (M1-M36)

Task Leader: PSI

other participants: NPL, JRC

- aim is to ensure the target supply for the experiments described in WP2 cover isotopes from all over the periodic table
 - light elements like ${}^6,7\text{Li}$, ${}^9\text{Be}$, ${}^{27}\text{Al}$ or ${}^{35}\text{Cl}$
 - metallic samples ${}^{54,56}\text{Fe}$, ${}^{59}\text{Co}$, ${}^{63,65}\text{Cu}$, ${}^{90,92}\text{Zr}$, ${}^{206,208}\text{Pb}$ and others
 - several actinides (Am, Pu, U and Th isotopes)
- responsible for the manufacturing are three target maker laboratories: NPL, JRC and PSI
- JRC oversees producing the requested actinide targets
- NPL and PSI take care of delivering all other targets.
- material quality and on-time delivery assure by actively engaging with experimental groups by online meetings and in-person visits
- task coordinator will maintain a list of requested samples, monitoring progress regularly (MS3.2 and D3.1)

Task 3.2

Fostering the target maker network (M1-M36)

Task Leader: PSI

other participants: JRC and collaboration with the INTDS directors board and all INTDS members

- INTDS (International Nuclear Target Development Society) promotes and intensifies collaboration and synergy within the target maker community
- INTDS shares advancements in target technology through its website and biennial congresses
- future plans include improving accessibility to information about target producers, target materials and production opportunities (D3.2)

Task 3.3

Implementation of an isotope separator at PSI (M1-M48)

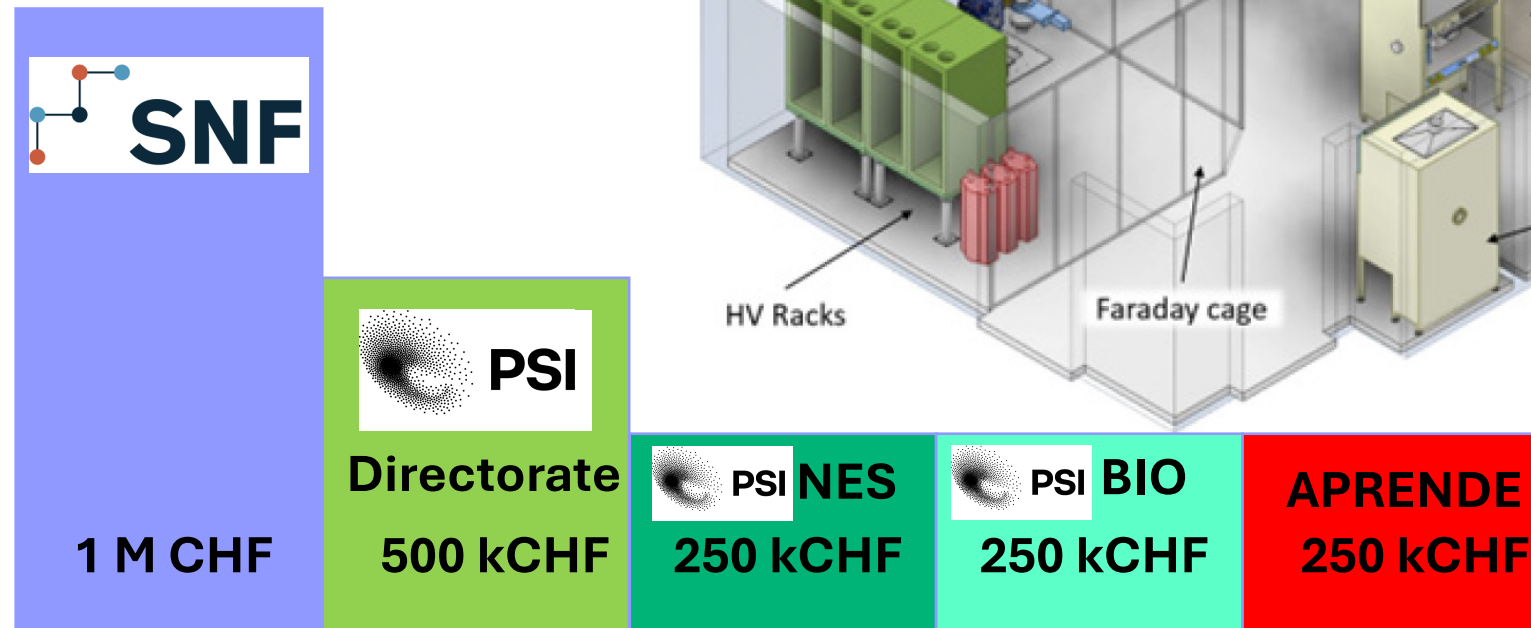
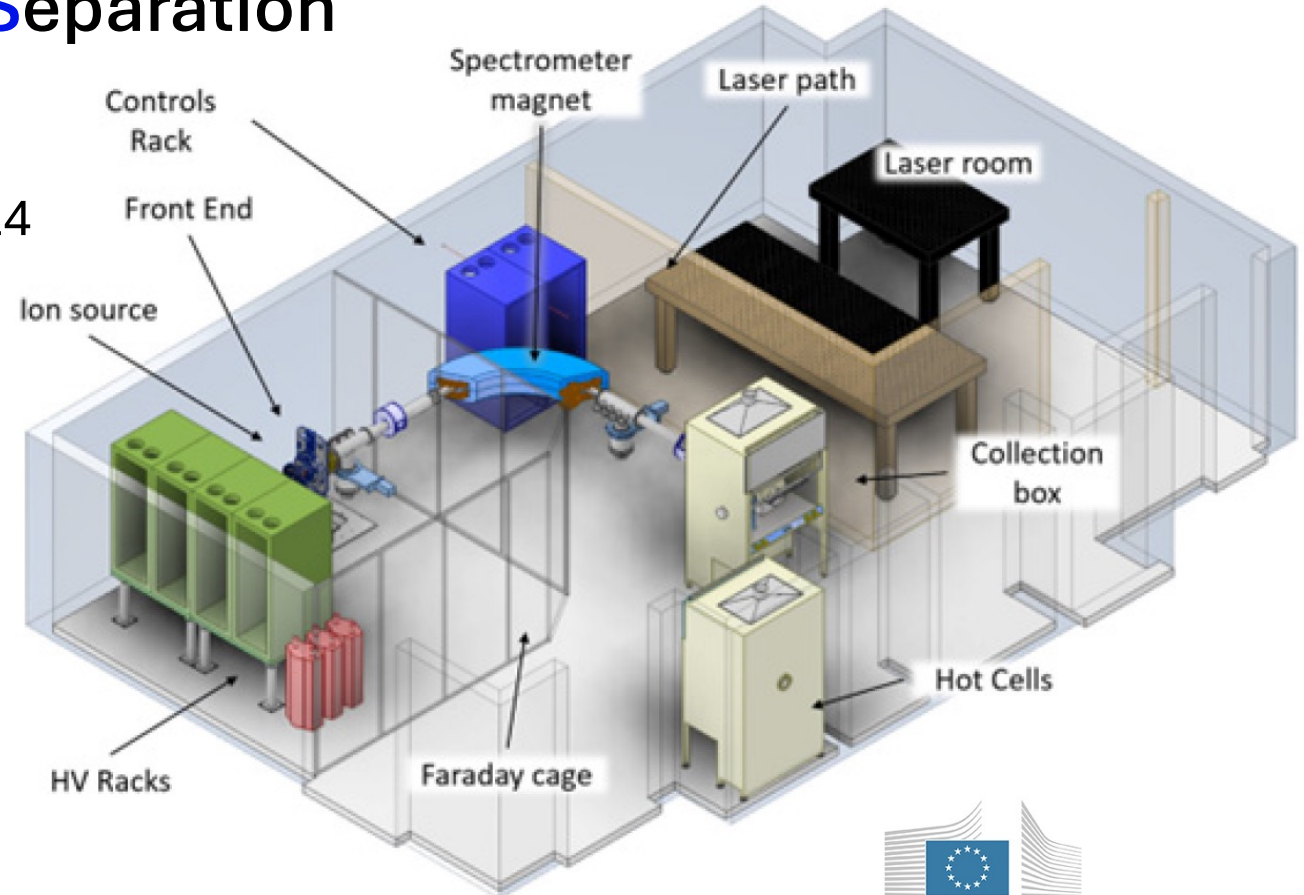
Task Leader: PSI

- specialized setup based on the RILIS ionization scheme will be established in a dedicated A-class laboratory for mass separation of highly radioactive materials at PSI
- design aims is an efficient separations gaining samples in the milligram range, utilizing partnerships with University of Mainz, ISOLDE CERN, and TRIUMF Canada
- application for funding (R'Equip '24) has been submitted to the Swiss National Science Foundation to cover 50% of the equipment costs
- estimated total project costs are 2.25 M€, including an additional funding through the APRENDE project to support the initiative (D3.3)

PROMAS R'Equip Project

PReparative Offline MAass Separation

Project submitted on 2nd May 2024
 under evaluation → decision on Nov. 2024
 planned Project-Start: 01.12.2024
 planned Project-End: 30.11.2025



Total budget: 2.250 kCHF