

## 8th High Power Targetry Workshop (HPTW2023)



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# The ISAC facility secondary irradiation and PIE upgrades

*Monday, 6 November 2023 12:00 (15 minutes)*

The ISAC facility's RIB production scheme enables the irradiation and PIE of secondary (parasitic) targets under high power beam conditions (500 MeV, 100  $\mu$ A), with potential for a wide range of investigations. Over recent years, ISAC has successfully commissioned and routinely operated secondary targets, seamlessly integrating a secondary irradiation program into the primary RIB target schedule. Moreover, the facility has established hot-cell and radioactive material handling procedures for secondary irradiated materials, while also expanding its PIE capabilities. Presently, the primary focus of the secondary irradiation program has been investigations of radiation damage in materials employed for both beam intercepting and auxiliary components within accelerator facilities, as well as studies in collaboration with the nuclear power field. Additionally, the developed capabilities open the possibility to examine long-irradiated stored components, including old ISAC beam windows, the harvesting of long-lived isotopes from secondary targets and the implementation of online monitoring systems. This overview provides a comprehensive summary of ISAC's experiences with secondary targets, encompassing both commissioning and online operation phases. It highlights outcomes from the secondary irradiation studies and offers insights into future system upgrades to unlock additional research.

### Themes for the contribution

8 Multipurpose use of targets and beam dumps:

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