



Contribution ID: 11

Type: Oral

Recent results on R&D of the SPES production target

Wednesday, 23 May 2012 10:00 (20 minutes)

The SPES project at Laboratori di Legnaro of INFN (Italy) is concentrating on the production of neutron-rich radioactive nuclei by the Uranium fission at a rate of 10¹³ fission/s. The emphasis to neutron-rich isotopes is justified by the fact that this vast territory has been little explored, at exceptions of some decay and in-beam spectroscopy following fission. The Rare Ion Beam (RIB) will be produced by ISOL technique using the proton induced fission on a Direct Target of UCx.

The most critical element of the SPES project is the Multi-Foil Direct Target. Up to day the proposed target represents an innovation in term of capability to sustain the primary beam power. The design is carefully oriented to optimise the radiative cooling taking advantage of the high operating temperature of 2000°C.

During the talk will be presented the recent developments on the fabrication, characterization, and on-line testing of uranium carbide targets. Also developments related to the ion-source activities using the surface ion source, plasma ion source, laser ion source techniques it will be reported. Finally test results on handling of the target system it will be shown.

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Session Classification: Production and Manipulation of RIB

Track Classification: Production and manipulation of RIB