Contribution ID: **5** Type: **poster**

Production of High-Intensity Rare Isotope Beams at SPES with the Multi-foil direct target

The SPES Project at Laboratori Nazionali INFN di Legnaro now is entering in its construction phase. The SPES is a ISOL type RIB facility concentrating on the production of neutron-rich radioactive nuclei by the Uranium fission at a rate of 1013 fission/s. The most critical element of the SPES project is the direct production target. The Rare Ion Beam (RIB) indeed, will be produced by proton induced fission on a UCx 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 2000oC. In the present talk will be presented recent developments dedicated to production, ionization and acceleration of RIB exceeding by more than one order of magnitude the currently available beam intensities. Design and tests of target chamber element, results on production and characterization of UCx target discs, and simulations of the ion sources performances will be discussed. The manipulation of very high intensity (up to 109 pps) RIB implicates advanced solutions for the safety and radioprotection issues. A preliminary design of the RIB production area will be presented

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Track Classification: Future RIB facilities