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The SPES project at LNL

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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 10^{13} 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.

The main goal of the proposed facility is to provide an accelerator system to perform forefront research in nuclear physics by studying nuclei far from stability. The SPES project is concentrating on the production of neutron-rich radioactive nuclei with mass in the range 80-160. The final energy of the radioactive beams on target will range from few MeV/u up to 10 MeV/u for A=130 using the exiting ALPI linac as RIB post-accelerator.

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