

# The SPES project at the INFN- Laboratori Nazionali di Legnaro

*Tuesday, 9 June 2015 15:30 (30 minutes)*

The SPES Radioactive Ion Beam (RIB) facility is in the construction phase at INFN-LNL.

The SPES project has the aim to provide high intensity and high-quality beams of neutron-rich nuclei as well as to develop an interdisciplinary research center based on the cyclotron proton beam.

It is based on a dual exit high current Cyclotron, with proton beam energy 35-70 MeV and 0.2-0.5 mA, used as proton driver to supply an ISOL system. A Direct UCx Target, able to sustain a power of 10 kW, was developed.

As the cyclotron can deliver two beams at the same time, an applied physics facility, mainly devoted to the production of radioisotopes for medicine and neutron beams for irradiation and material study, will be supplied.

The ISOL system will produce neutron-rich radioactive ions by proton induced fission in the UCx target. The expected fission rate in the target is in the order of 10<sup>13</sup> fissions per second. The exotic isotopes will be re-accelerated by the ALPI superconducting LINAC at energies of 10 AMeV and higher, for masses in the region of A=130 amu, with an expected rate on the secondary target of 10<sup>7</sup> – 10<sup>9</sup> pps. The expected SPES beam intensities, quality and energies together with the up to date experimental apparatuses, which are at present and will be in the near future available at LNL, will permit performing forefront research to study nuclear structure and nuclear dynamics in a region of the nuclear chart far from stability.

The actual status of the project will be presented focusing on the schedule and the specificity of the project in the European and international frame

**Primary author:** Dr PRETE, Gianfranco (INFN-LNL)

**Presenter:** Dr PRETE, Gianfranco (INFN-LNL)

**Session Classification:** Future RIB facilities 1

**Track Classification:** Future RIB facilities