

## Status of the HIE-ISOLDE project

*Tuesday, 26 November 2013 09:00 (30 minutes)*

The HIE-ISOLDE project represents a major upgrade of the ISOLDE facility with a mandate to significantly improve the quality and increase the intensity and energy of radioactive nuclear beams produced at CERN. The focus of the upgrade is a 40 MV superconducting linac to increase the beam energy from 3 MeV/u to over 10 MeV/u, and which is based on thirty-two niobium sputter-coated quarter-wave resonators (QWRs) comprising two different families ( $\beta_g = 6.3\%$  and  $10.3\%$ ) operating at 101.28 MHz. The project will expand the experimental nuclear physics programme at ISOLDE and permit Coulomb excitation reactions with the heaviest nuclei available at ISOLDE as well as transfer reactions across the nuclear chart. The existing REX linac will be upgraded in stages to first deliver beam energies of up to 5.5 MeV/u, with two high- $\beta$  cryomodules placed downstream, before the energy variable section of REX is replaced with two low- $\beta$  cryomodules and two additional high- $\beta$  cryomodules are installed to attain 10 MeV/u. The superconducting linac will permit energy variation and flexibility never previously available at ISOLDE. It is also foreseen to install a multi-harmonic buncher upstream of the RFQ and a chopper system in the final stage to increase the bunch spacing from 10 ns to approximately 100 ns and allow time-of-flight particle tagging techniques to be exploited by the experiments.

A status report of the different R&D activities will be presented, including the progress of the construction and installation works.

**Primary author:** KADI, Yacine (CERN)

**Presenter:** KADI, Yacine (CERN)

**Session Classification:** Technical HIE\_ISOLDE