

HIE-ISOLDE cavity coating

Monday 17 December 2012 18:05 (1h 25m)

The HIE-ISOLDE project is the upgrade of the existing facility ISOLDE, which is dedicated to the production of a large variety of radioactive ion beams for many different experiments.

Among other things, HIE-ISOLDE project requires the production of many accelerating superconducting cavities in order to increase the speed and the energy of the beam. These superconducting cavities are made of a Copper substrate, in top of which is deposited a thin micrometric layer of a superconducting material, in our case Niobium.

In a first phase, the goals are to obtain good-quality Nb/Cu films - which is already a challenging task in such a complex geometry - and also to ensure reproducibility. This requires an in depth knowledge of thin film and ultra-high vacuum (UHV) technology. This activity is still ongoing.

In a second phase, the aim will consist of the "industrialization" of the HIE-ISOLDE cavities, meaning to carry out the production of the required number of cavities guaranteeing their quality and functionality.

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Session Classification: Poster session