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Reinforcing the participation and contribution of the Portuguese team @ HIE-ISOLDE

The experimental nuclear physics group of the Faculty of Science of the University of Lisbon has recently joined the consortium of groups traditionally working at ISOLDE in fundamental nuclear physics. Nowadays, integrated at the LIP laboratory, our group has increased its presence and participation at various levels at the ISOLDE laboratory and is looking forward to the promising future of HIE-ISOLDE.

The group normally focuses on the study of nuclear reactions at relativistic energies in experiments performed at the GSI laboratory (Darmstadt, Germany), as well as on the study of properties of interest for nuclear astrophysics of stable and exotic nuclei. The group has a solid background in the preparation, execution and analysis of complex nuclear reaction experiments.

Complementary to this, and thanks to the refurbishment of a Balzer's ultra-high vacuum thermal evaporator, the group has recently initiated a line of work devoted to the production of high quality thin films aimed to be used as targets in nuclear physics reaction experiments. A newly developed technique [1] resulted in a first batch of films isotopically enriched in ^{208}Pb . The produced targets were used during the recent experiment IS619, in the study of the elastic scattering of ^{15}C nuclei at energies close to the Coulomb barrier at the SEC line of HIE-ISOLDE.

Considering the higher energies available at HIE-ISOLDE, the group is working on a proposal to study the interaction of proton-rich nuclei in inverse kinematic reactions with Helium targets. These studies aim at improving the knowledge of basic nuclear physics properties that would reduce present associated uncertainties in nuclear reaction networks for nuclear astrophysics.

The present contribution provides an overview of the recent participation and future goals of the group at the ISOLDE/CERN laboratory.

Author: GALAVIZ REDONDO, Daniel (LIP Laboratorio de Instrumentacao e Fisica Experimental de Part)

Co-authors: Dr GUILHERME MARTINS CORREIA, João (EP Department, ISOLDE-CERN; Centro de Ciências e Tecnologias Nucleares (CCTN), Instituto Superior Técnico, Universidade de Lisboa, Portugal); PERALTA, Luis (LIP); HONORIO, R. (LIP); TEUBIG, P. (LIP); HENRIQUES, A. (LIP)

Presenter: GALAVIZ REDONDO, Daniel (LIP Laboratorio de Instrumentacao e Fisica Experimental de Part)

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