

Production and Characterization of Rare Isotopes Targets at PSI: Present Status and Future Prospects

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This contribution presents the production and the characterization of rare isotopes targets, at the Paul Scherrer Institut, for neutron cross section measurements in energy ranges of interest for nuclear physics and astrophysics. Particular emphasis is given to the chemical characterization of the starting material, which can drastically influence the outcome of the entire cross section measurement. In this respect, a recent example of nuclear cross section measurement failure is presented.

The importance of the target characterization, in terms of deposited activities and spatial distributions, for a correct evaluation of cross section measurements, is addressed as well. In this context, two methods developed at PSI, based on alpha spectrometry coupled with the advanced alpha-spectroscopy simulation program, and gamma spectroscopy coupled with a screaming device and radiographic imaging, respectively, is presented.

Primary author: Dr MAUGERI, Emilio Andrea (Paul Scherrer Institut)

Co-authors: Dr SCHUMANN, Dorothea (Paul Scherrer Institut); Dr DRESSLER, Rugard (Paul Scherrer Institut); Dr HEINITZ, Stephan (Paul Scherrer Institut)

Presenter: Dr MAUGERI, Emilio Andrea (Paul Scherrer Institut)

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