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GANIL's Target Laboratory: Supporting Nuclear Physics with Advanced Target Development

The GANIL facility is an infrastructure dedicated to fundamental research using ion beams in fields such as nuclear physics, materials science, astrophysics, radiobiology, etc. GANIL's target laboratory is part of the European EuroLabs project, which, among other objectives, brings together the community of 'nuclear target manufacturers' at the European level to produce a wide range of tailored targets for fundamental research in nuclear physics. By mastering techniques such as physical vapor deposition and mechanical rolling, targets with thicknesses ranging from a few tens of μg/cm² to several mg/cm² can be created. Different shapes can be produced, such as thin foils, self-supporting films, or deposited layers on backing materials, each chosen based on the specific properties of the target material and the desired outcome. In order to meet new experimental requirements, particularly those linked to the SPIRAL2, 'Neutrons for Science' (NFS), and 'Super Separator Spectrometer' (S3) facilities, an upgrade of the current target laboratory is underway to significantly expand and optimize target production capabilities, particularly by developing a wide range of targets with an emphasis on rare earth elements, extending to the production of isotopically enriched targets. The latter pave the way for in-depth studies of nuclear reactions and exotic nuclei, as well as the production of radioisotopes for medical applications.

Work-package

WP2 - RIs for Nuclear Physics

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