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Material Science (inorganic) at GANIL

In materials science, many studies use GANIL ion beams to simulate irradiation conditions encountered in harsh, radiative environments, such as those in nuclear reactors, in accelerators or even in space. Another field for which GANIL beams are frequently used is defect engineering or, more generally, the use of swift heavy ions to modify materials in a beneficial (and controlled) way. What is essential for any application is the consequences of the irradiation-induced structural modifications on the functional properties (electrical, mechanical, chemical$\cdots$) of the materials. Therefore, there is a crucial need for the development of a multiscale predictive approach to better understand the irradiation effects induced in materials and even to predict those. For this purpose, there is a crucial need in experimental data: the beamlines and the in-situ set-ups should be maintained and developped.

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