

## Targets' development for SHE Research at GANIL

Stodel Ch.<sup>a</sup> for the S<sup>3</sup> collaboration

<sup>a</sup> *Grand Accélérateur National d'Ions Lourds, IN2P3/CNRS – CEA/DRF, Bvd Henri Becquerel, F-14076 CAEN, France, e-mail: stodel@ganil.fr*

France has now the chance to contribute notably to SHE research with the unprecedented high intensity beams from the superconducting linear accelerator (LINAG) of the new SPIRAL2 infrastructure at GANIL in conjunction with the “Super Separator Spectrometer” (S<sup>3</sup>)<sup>1</sup>. In order to cope with the very low production rate of the rare events, the beam intensities will be higher by a factor of five to ten compared to the present ones. Then, a major experimental concern is the behavior of thin targets under these highly intense heavy ion beams.

We propose to report firstly briefly on the envisaged experimental program<sup>2</sup> and the technical developments of S<sup>3</sup><sup>3</sup> which includes a two-stage separator (momentum achromat followed by a mass spectrometer) coupled to the implantation-decay station SIRIUS or to a gas catcher<sup>4</sup>. Secondly, we will detail the targets' development including the S<sup>3</sup> targets stations with its appropriate instruments<sup>5</sup> to check the integrity of the material and the necessary studies for targets' fabrication and characterization.

### **References**

1. H. Savajols et al, *AIP Conference Proceedings*, vol. 1238, p. 251, 2010.
2. D. Ackermann, *EPJ Web of Conferences*, vol. 193, p. 04013, 2018.
3. F. Dechery et al., *Nuclear Instruments and Methods in Physics Research B*, vol. 376, pp. 125-130, 2016.
4. J. Piot, *Acta Physica Polonica B*, vol. 43, p. 285, 2012.
5. J. Kallunkathariyil et al., *AIP Conf. Proc.*, vol. 1962, pp. 030019-1-9, 2018.