

# Plans For the Production Building at the future Radioactive Ion Beam production laboratory SPIRAL 2 at GANIL and handling of the targets

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At GANIL (Grande Accelérateur National des Ion Lourds) a new facility, SPIRAL 2 [1], is under construction. The future facility is being constructed for the production of radioactive ion beams through the ISOL (Isotope Separation On Line) method or the In-Flight method. We will here focus on the technical concepts for the construction of the ISOL production building with the handling of the UC<sub>x</sub> targets.

The scientific goals of the ISOL project are to have up to 10<sup>14</sup> neutron induced fissions/sec in an UC<sub>x</sub> target [2, 3, 4]. The neutrons are produced by a 40 MeV deuteron beam impinging on a carbon converter. Except the UC<sub>x</sub> targets there will be other thick and/or thin targets and primary beams for the production of RIBs (Radioactive Ion Beams) using the ISOL technique.

To achieve the 10<sup>14</sup> fissions/sec the target will consists of 2.3 kg high-density (11g/cm<sup>3</sup>) uranium carbide, heated up to 2000 C for a fast diffusion-effusion process, the target is coupled to an ion source and the 1<sup>+</sup> ion beam are then accelerated for transport to different experimental stations in the new facility or injected into the existing GANIL facility for post-acceleration.

The strong safety constraints around the handling of the targets presently foreseen have a strong impact on the design of the technical process from fabrication of the targets until the waste management after irradiation. The building constructed has to answer to all the radiological and technical constraints while keeping a flexibility for the production of exotic radioactive ion beams of high intensity.

## References

- [1] GANIL homepage: <http://www.ganil-spiral2.eu>
- [2] White book of SPIRAL 2
- [3] A. Ozgumus, this conf.
- [4] B. Hy, this conf.