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TULIP project: first on-line result and close future

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The TULIP project* aims to produce radioactive ion beams of short-lived neutron-deficient isotopes by using fusion-evaporation reactions in an optimized Target Ion Source System (TISS). The first step consists of the design of a TISS to produce rubidium isotopes. It was tested with a primary beam of $^{22}\text{Ne}@4.5\text{ MeV/A}$ irradiating a ^{nat}Ni target at the SPIRAL1/GANIL facility in March 2022. Rates of $^{76,78}\text{Rb}$ were measured as well as an exceptionally short atom-to-ion transformation time for an ISOL system, of the order of 200 μs .

The second step of the project aims at producing neutron deficient short-lived metallic isotopes in the region of ^{100}Sn . A “cold” prototype has been realized to study the electron impact ionization in the TISS cavity and a “hot” version is under construction to prepare an on-line experiment expected in 2023.

Obtained results and the project status will be presented.

* : <https://anr.fr/Projet-ANR-18-CE31-0023>

Primary authors: BOSQUET, Vincent (Ganil); JARDIN, Pascal (GANIL)

Co-authors: CHAUVEAU, Pierre (GANIL); DAMOY, Samuel (GANIL); DELAHAYE, Pierre (GANIL); DUBOIS, Mickaël (GANIL); MANSSOUR, Fadil (GANIL); LALANDE, Mathieu (GANIL); MICHEL, Clément (GANIL); THOMAS, Jean-Charles (GANIL); MACCORMICK, Marion (IJCLab)

Presenter: BOSQUET, Vincent (Ganil)

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