
# Status of the Low Energy Branch at SPIRAL2-S$^3$

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The Super Separator Spectrometer (S$^3$) is a new-generation recoil separator currently under construction at SPIRAL2-GANIL, which will enable the study of fusion-evaporation reaction products using the intense heavy-ion beams delivered by the SPIRAL2 linear accelerator [1]. The S$^3$ Low Energy Branch (S$^3$-LEB) is an experimental setup which will be installed at the focal plane of S$^3$, aiming to stop the nuclei in a gas cell and extract them for subsequent measurements by laser spectroscopy, mass spectrometry and decay spectroscopy [2]. An important part of the S$^3$-LEB scientific program will be dedicated to the study of the isotopes of heavy elements. The setup will employ the in-gas laser ionization and spectroscopy technique in the supersonic jet emerging from the gas cell, which will allow reaching the spectral resolution required for measuring the isotope shifts and hyperfine structures of rare isotopes [3].
Currently, the S$^3$-LEB setup is being commissioned off-line in preparation for first experiments with S$^3$ [4]. This contribution will present an update of recent results, including the first in-gas-cell and in-gas jet laser spectroscopy performed with stable erbium isotopes, while separating and counting the photo-ions using the integrated multi-reflection time-of-flight mass spectrometer [5].

## References

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