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# Measurement of Neutron-Induced Reactions on Radioactive Isotopes via Surrogate Reactions at RIBF

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Measuring neutron-induced reactions on radioactive isotopes is a significant challenge, as both the projectile (neutron)
and the target nuclei are often unstable. Surrogate reactions offer a promising alternative for evaluating these nuclear
reaction rates. At the RIBF facility in RIKEN, radioactive isotope beams can be slowed down and focused using a novel device called OEDO.

We employ the (d,p) reaction as a surrogate for neutron-induced reactions. A distinctive feature of our experimental
setup is the use of a magnetic spectrometer located downstream of the target. This allows for unambiguous identification of the reaction residues in coincidence with the recoiled protons, enabling us to determine the decay
channels above the separation energy as a function of excitation energy.

Our first experiment focused on the 79Se(n,γ) reaction. Subsequent measurements targeted surrogate reactions for
130Sn(n,γ) and 56Ni(n,p). In this talk, we will primarily present results from the 79Se case and introduce preliminary
findings from the 130Sn measurement.

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