Experiments with Texas Active Target Detector on Rare Isotope Beams

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The TexAT (Texas Active Target) is a versatile detector in operation at the Cyclotron Institute Texas A&M University since 2017 [1]. The detector is designed to be of general use for experiments with rare isotope beams at low energies relevant to nuclear structure, and for direct and indirect measurements of the key astrophysical reaction rates. The TexAT combines a highly segmented Time Projection Chamber (TPC) based on Micromegas+GEM detector [2,3] backed by telescopes of Si-CsI(Tl) detectors. In full configuration it covers solid angle of about 3π, providing a high efficiency for experiments with low intensity exotic beams. TexAT allows for the 3D track reconstruction of the incoming and outgoing charged particles involved in a reaction and can be used for wide variety of experiments with rare isotope beams.

The outlook of some experiments with TexAT on the beams of rare isotopes at the MARS recoil separator (Cyclotron Institute Texas A&M University), RIBF (RIKEN, Japan) and the beams of rare re-accelerated ions on RIBF (TRIUMF, Canada) will be presented.

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