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PHYSICS WITH HEAVY NEUTRON RICH RIBS AT THE HRIBF¹

DAVID RADFORD, Physics Division, Oak Ridge National Laboratory¹ — The Holifield Radioactive Ion Beam Facility at the Oak Ridge National Laboratory has recently produced the world's first post-accelerated beams of heavy neutron-rich nuclei. $B(E2;0^+ \rightarrow 2^+)$ values for neutron-rich $^{126,128}\text{Sn}$ and $^{132,134,136}\text{Te}$ isotopes have been measured by Coulomb excitation of radioactive ion beams in inverse kinematics. The results for ^{132}Te and ^{134}Te ($N=80,82$) show excellent agreement with systematics of lighter Te isotopes, but the $B(E2)$ value for ^{136}Te ($N=84$) is unexpectedly small. Single-neutron transfer reactions leading to ^{134}Te beam on $^{\text{nat}}\text{Be}$ and ^{13}C targets at energies just above the Coulomb barrier. The use of the Be target provided an unambiguous signature for neutron transfer through the detection of two correlated alpha particles, arising from the breakup of unstable ^8Be . The results of these experiments will be discussed, together with plans for future experiments with these heavy n-rich RIBs.

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