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Study of Fusion enhancement/hindrance with ^{132}Sn A.M. VINODKUMAR, W. LOVELAND, D. PETERSON, P. SPRUNGER, Oregon State University, J.F. LIANG, D. SHAPIRA, R.L. VARNER, C.J. GROSS, Oak Ridge National Laboratory, J.J. KOLATA, University of Notre Dame, L. WESTERBERG, Uppsala University — One of the interesting aspects of the study of nuclear reactions induced by radioactive ion beams is the possibility of using neutron rich projectiles to synthesize new, neutron rich heavy nuclei. Also, large fusion cross section enhancement has been predicted for fusion reactions with massive neutron rich radioactive nuclei by different authors. This is due to the lowering of the fusion barrier, excitation of the soft dipole modes and lowering of reaction Q values. However, previous experimental data with stable beams indicates fusion hindrance in the case of massive neutron rich nuclei. We have measured the fusion excitation function of ^{96}Zr with neutron-rich short-lived ^{132}Sn and stable ^{124}Sn projectiles near the Coulomb barrier. The measurement was carried out at ORNL. The coincident fission fragments were detected using 4 Si strip detectors. The time of flight of the beam as well as the fragments were measured using 2 upstream timing MCP's and timing signal from strip detectors. Using different energy,time and position conditions, the fusion-fission events were separated from other reaction processes. The experimental results will be presented along with theoretical model predictions.

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