

Abstract Submitted
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Production of neutron-rich isotopes in reactions at beam energies well above the Coulomb Barrier¹ SHAOFEI ZHU, R.V.F. JANSSENS, M.P. CARPENTER, C.J. CHIARA, E. JACKSON, B.A. KAY, F.G. KONDEV, T. LAURITSEN, E.A. MCCUTCHAN, D. SEWERYNIAK, Argonne National Laboratory, N. HOTELING, I. STEFANESCU, University of Maryland, B. FORMAL, Institute of Nuclear Physics, Poland — An experiment with a ^{48}Ca beam at an energy of 320 MeV ($\sim 100\%$ above the Coulomb barrier) has been carried out in inverse kinematics on a 0.5 mg/cm^2 ^{26}Mg target at Gammasphere. This experiment is a first attempt to extend the reach of complex reactions in producing neutron-rich nuclei beyond the technique of using deep inelastic reactions on a thick target at 25% above the Coulomb barrier. The main purpose of the experiment was to explore the isotopic production of neutron-rich nuclei above doubly-magic ^{48}Ca nucleus, as well as in the region around the target. The systematics of isotopic yields at these energies can be anticipated from Q-value arguments in the form proposed in Ref. [1]. The reaction yields will be presented. The quality of the gamma spectra from this measurement with a thin target was assessed with known isotopes. [1] A.Y. Abul-Magd et al., Phys. Lett. B 39, 166(1973).

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