

Abstract Submitted
for the DNP11 Meeting of
The American Physical Society

Measurements and coupled reaction channels analysis of one and two proton transfer reactions for $^{28}\text{Si}+^{90,94}\text{Zr}$ systems SUNIL KALKAL, S. MANDAL, A. JHINGAN, J. GEHLOT, P. SUGATHAN, K.S. GOLDA, N. MADHAVAN, RITIKA GARG, SAVI GOYAL, GAYATRI MOHANTO, S. VERMA, ROHIT SANDAL, BIVASH BEHERA, G. ELEONORA, H.J. WOLLERSHEIM, R. SINGH — Measurements of angular distributions for one and two proton stripping reactions for $^{28}\text{Si}+^{90,94}\text{Zr}$ systems were performed at lab energy 120 MeV with ^{28}Si beam at Inter University Accelerator Center, New Delhi. Theoretical calculations performed using the quantum mechanical coupled reaction channels code FRESKO (including various intermediate states involving target and projectile excitations before and/or after transfer along with sequential transfer) were able to reproduce one and two proton transfer angular distributions for both the systems reasonably well. It was found that the DWBA calculations could describe the one proton transfer data well for both the systems but failed to reproduce the angular distributions for two proton transfer channels. The present measurements underline the importance of sequential transfer at energies much above the Coulomb barrier. We had also performed transfer reaction measurements for these systems in the sub- and near barrier region using recoil mass separator.

Sunil Kalkal

Date submitted: 06 Jul 2011

Electronic form version 1.4