^{40}Ca(^{96}Zr,^{94}Zr) 2011Co14

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen[#] and Balraj Singh	NDS 135, 1 (2016)	31-May-2016

Two-neutron transfer channel in inverse kinematics.

2011Co14: E(^{96}Zr)=275-330 MeV from XTU-Tandem + ALPI at LNL, Legnaro. This energy is at or up to 25% below the Coulomb barrier, thus only the neutron transfer channels are relevant. Target=CaF_2, 50 μg/cm^2 strip supported on a 15 μg/cm^2 carbon backing. The Ca-like recoils were detected by PRISMA magnetic spectrometer. Mass identification was made from event-by-event reconstruction of the ion trajectory in the magnetic elements. Measured excitation functions. Deduced total kinetic energy loss (TKEL) distributions, differential cross sections and transfer probabilities. Comparison with semi-classical microscopic calculations.

Additional information 1.

^{42}Ca Levels

E(level)	J^π	Comments
0	0^+	
5.76×10^3	0^+	Transition to 5.76 MeV, 0^+ state is much stronger than for g.s. The 5.76 MeV state is dominated by two neutrons in the $2p_{3/2}$ shell.