

Experimental Study of Proton Induced Reaction Cross-Sections of ^{nat}Mo using MC-50 Cyclotron at KIRAMS.

Mayeen Uddin KHANDAKER, Guinyun KIM¹, Kwangsoo KIM, and Dongchul SON

Department of Physics, Kyungpook National University, Daegu 702-701

Young Seok LEE

Pohang Accelerator Laboratory, Pohang University of Science and Technology, Pohang 790-784

Abstract

We have measured the proton induced reaction cross-sections of natural molybdenum by using the MC-50 cyclotron of Korea Institute of Radiological and Medical Sciences (KIRAMS). Excitation functions for the production of ^{99m}Tc , $^{96(m+g)}\text{Tc}$, ^{95m}Tc , ^{95g}Tc , ^{94m}Tc , ^{94g}Tc , ^{93m}Tc and ^{93g}Tc radioisotopes were measured by using the stacked foil activation technique and high-resolution gamma ray spectrometry. The results have given a new data for all of the investigated radio nuclides. The results of the present experiment showed good agreement with the earlier reported data in the investigated energy region.

PACS number: 25.40.Lw

Keywords: Proton induced reaction cross-section; stacked foil technique; Mo+ p reactions; MC50 cyclotron.

¹ E-mail: gnkim@knu.ac.kr; Tel.: + 82-53-950-5320