

## Investigation of $\text{natTi}(p,x)$ Reaction and Measurement of Excitation Functions up to 45 MeV

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Natural titanium activated with high energy proton beam results production of some valuable radionuclides applicable in medicine and industry. In this study we measured the production cross-sections of  $^{43}\text{m}, ^{44}\text{g}, ^{46}, ^{47}, ^{48}\text{Sc}$ ,  $^{48}\text{V}$  radionuclides from their respective threshold to 45 MeV in  $\text{natTi}(p,x)$  reaction. Well-known stacked-foil activation technique and off-line gamma-ray spectrometry system was applied in the study. The sample was activated using the external beam line of MC-50 cyclotron at Korea Institute of Radiological and Medical Sciences (KIRAMS), Korea. The measured results were compared with the literature data as well as with the model calculations using TENDL-2015 library based on the TALYS 1.8 code. The integral yields for thick target of the investigated radio-nuclides was also deduced from the measured excitation functions. The study is beneficial for those involved in radioisotope production and is helpful to modify the nuclear model calculations.

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