Evaluation of Nuclear Reaction Cross Sections for the Production of ^{52}Mn to be used in Nuclear Medicines. WARIS ALI, GICCL — Hybrid diagnostic techniques like Positron Emission Tomography (PET)/ Magnetic Resonating Imaging (MRI) are field of interest and ^{52}Mn is among several other contenders' radionuclides of this sprint. Although Mn have other potential radionuclides including ^{51}Mn, ^{52g}Mn and ^{52m}Mn but ^{52}Mn possess most suitable attributes which brought it as promising participant for PET/MRI applications. Soaring applications of the radionuclides in both diagnostic and therapeutic demands high yield, socio economic and optimum production routes. Production cross section for ^{52}Mn have been reported by many groups via nuclear reactions namely ^{52}Cr(p, x)^{52}Mn, ^{nat}Cr(p, x)^{52}Mn, ^{50}Cr(a, x)^{52}Mn , ^{54}Fe(d, x)^{52}Mn, ^{nat}Ni(d, x)^{52}Mn, and ^{59}Co(d, x)^{52}Mn. Current study emphasizes the production via charge particle induce reactions on Cr and Ni. Experimental reported data were rivalled to theoretic computations by means of EMPIRE-3.2, TALYS-1.9 and ALLICE-IPPE nuclear model codes. Using recommended excitation functions based on established techniques Thick Target Yield (TTY) were calculated. Radionuclidic impurities analysis were done for each case and optimum production route is proposed for future productions.

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