# Measurement and Calculation of D-T Neutron Induced Reaction Cross Sections

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Radionuclides production cross sections have been measured by using the activation technique and off-line gamma spectrometry for D-T neutron induced reactions. The samples were composed with mental foils of Al, Ti, Mn, Fe, Ni, Zn, Zr, Nb, In, Sn, Ta, Au and Pb. Reactions of $^{90}$Zr(n,2n)$^{89}$Zr and $^{93}$Nb(n,2n)$^{92m}$Nb were used to determine the mean neutron energy by the method of cross section ratios. The reactions of $^{93}$Nb(n,2n)$^{92m}$Nb and $^{27}$Al(n,α)$^{24}$Na were used to calculate the neutron intensity. Experimental data are compared with evaluated nuclear data of the CENDL-3.2, ENDF/B-VIII.0, JENDL-5, BROND-3.1 and JEFF-3.3 libraries. Besides, these excitation functions were calculated by using theoretical model of the TALYS-1.96 code from thresholds up to 20 MeV with adjusted parameters. And a group of parameters was obtained, which shows better consistency than the default parameters compared with the experimental data.