

PROTON INDUCED CROSS-SECTION CALCULATIONS OF SOME CHALCOGEN ELEMENTS

A. KAPLAN¹, E. TEL², A. AYDIN³, G. YILDIRIM¹ and H. BÜYÜKUSLU¹

¹*Süleyman Demirel University, Faculty of Arts and Sciences, Department of Physics, Isparta- TURKEY*

²*Gazi University, Faculty of Arts and Sciences, Department of Physics, Ankara- TURKEY*

³*Kırıkkale University, Faculty of Arts and Sciences, Department of Physics, Kırıkkale- TURKEY*

The chalcogens are the name for the periodic table group 16 (VIA) in the periodic table. It is sometimes known as the oxygen family. It consists of the elements; Oxygen (O), Sulfur (S), Selenium (Se), Tellurium (Te), the radioactive Polonium (Po), and the synthetic Ununhexium (Uuh). In this study, the cross-section calculations on the excitation functions of $^{18}\text{O}(\text{p},\text{n})^{18}\text{F}$, $^{76}\text{Se}(\text{p},\text{n})^{76}\text{Br}$ and $^{124}\text{Te}(\text{p},\text{n})^{124}\text{I}$ reactions have been carried out in the 5-40 MeV incident proton energy range. In these calculations, the pre-equilibrium and equilibrium effects have been investigated. The pre-equilibrium calculations involve hybrid model, geometry dependent hybrid model, the cascade exciton model and full exciton model. Equilibrium effects are calculated according to Weisskopf–Ewing model. The calculated results are compared with the experimental data taken from the literature.
