

${}^1\text{H}({}^{14}\text{O},\text{P})$:Texas 2004Go15

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. Kelley, T. Truong, C. G. Sheu		ENSDF	17-July-2016

2004Go15:

The authors evaluated the ${}^1\text{H}({}^{14}\text{O},\text{p})$ elastic scattering reaction in Thick Target Inverse Kinematics (TTIK). E_{res} , E_x , Γ and J^π were deduced from the analysis.

A beam of ${}^{14}\text{O}$ ions, produced by fragmentation of an ${}^{14}\text{N}$ beam on a hydrogen target at the Texas A&M University Cyclotron Institute, was degraded in energy to obtain 80.6 MeV beam. The low-energy beam impinged on a thick CH_4 gas target that provided a low background when compared with other approaches. Protons from elastic scattering reactions were detected at $\theta=0^\circ$, $+9.2^\circ$, $+16.5^\circ$ and -7.5° in a $\Delta\text{E-E}$ Si detector telescope. The excitation function was analyzed using a Woods-Saxon potential model to deduce resonance energies.

 ${}^{15}\text{F}$ Levels

E(level)	J^π	Γ	$E(\text{p}+{}^{14}\text{O})_{\text{cm}}$ (keV)	Comments
0	$1/2^+$	0.7 MeV	$\approx 1.29 \times 10^3$	E(level): The authors give a discussion on the s-wave scattering, which highlights a difference between the resonance peak cross section energy (1.29 MeV $+8-6$) and the maximum of the wavefunction amplitude (1.45 MeV $+16-1$). This effect also impacts the Γ value, which is observed with $\text{FWHM} \approx 1.2$ MeV.
$\approx 1.5 \times 10^3$	$5/2^+$	0.325 MeV 60	2795 45	