^{21}Ne(n,γ): res 2014He25

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 127, 69(2015)	1-Apr-2015

95.4% enriched ^{21}Ne gas target in stainless steel cylinder at 150 atmospheric pressure. Neutrons were produced from ^{7}Li(p,n)^{7}Be reaction with a pulsed proton beam of 1.0 ns width and a variable repetition rate of 1 MHz and 250 MHz for the capture and transmission runs. E=5 to 800 keV. Neutrons were detected using two C_6D_6 liquid scintillation detectors, neutron energy resolution was 0.2 and 1.5 keV at 20 and 200 keV, respectively. Neutron capture events were detected using the C_6D_6 detectors in combination with the pulse height weighting technique. The resonances in the capture cross sections were identified and analyzed using the multilevel R-matrix code SAMMY.

^{22}Ne Levels

E(level)†	J$^{\pi}$‡	L‡	Comments
10416.4 *3*	4	2	Resonance energy = 52.1 keV *3*.
10462.5 *5*	4	2	Resonance energy = 98.2 keV *5*.
10501.6 *3*	4	2	Resonance energy = 137.3 keV *3*, Γ_γ=1.56 eV *21*.
10544.9 *4*	2	0	Resonance energy = 180.6 keV *4*, Γ_γ < 0.24 eV.

† Deduced by evaluator using Sn(^{22}Ne)=10364.26 *4* (2012Wa38) and reported resonance energy in 2014He25.

‡ From capture cross section fittings using the multilevel R-matrix code SAMMY.