^{20}Na(p,γ) 2006Mu07

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	R. B. Firestone	NDS 127, 1 (2015)	15-Jan-2015

Beam=$^{20}Na^{5+}$, target=$(CH_2)_n$.

^{20}Na beam was produced from fragmentation of ^{28}Si target (as silicon carbide) with a proton beam of 500 MeV at ISAC-I, TRIUMF facility. The fragments were analyzed by DRAGON spectrometer. E($^{20}Na^{5+}$)=1.25 and 1.60 MeV/nucleon. Measured E_p using MSL type YY1 silicon strip detectors and the Louvain-Edinburgh detector array (LEDA). Deduced Γ_p, γ_c for three proton resonances at 780, 1002 and 1312 keV using R-matrix analysis. Discussed implications for role of this reaction in hydrogen burning in novae and x-ray bursts.

E_p=proton resonance energy in the c.m. system.

^{21}Mg Levels

E(level)[†]	J^π[‡]	Comments
4005 *15*	$3/2^+$	E_p=780 keV, Γ_p=8 keV *3*, γ_c=0.86 MeV$^{1/2}$.
4228 *15*	$5/2^+$	E_p=1002 keV, Γ_p=5 keV *+4−2*, γ_c=0.29 MeV$^{1/2}$.
4538 *15*	$3/2^+$	E_p=1312 keV, Γ_p=65 keV *8*, γ_c=0.69 MeV$^{1/2}$.

[†] 15 keV uncertainty assumed by evaluator.

[‡] Consistent with shell model calculations.