$^{12}C(^{18}O,^{8}Be),^{14}C(^{18}O,^{10}Be)$ 2006Fr16,2006Yi01,2002Cu04

History

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

2006Fr16,2006Yi01: $^{12}C(^{18}O,^{8}Be)$: Target: Self-supported ^{12}C of thickness 120 $\mu g/cm^2$; Projectile: ^{18}O, E=140 MeV; breakup fragments of ^{22}Ne into $^{18}O + \alpha$ and $^{14}C + ^{8}Be$ were detected using two charged-particle telescopes; one for light ions and the other for heavy ions. The light-ion telescope consisted of ΔE+E Si and a CsI detectors − energy resolution ≤ 500 keV, and the heavy-ion telescope was composed of two elements, a gas ΔE detector and a silicon-strip stopping detector − energy resolution similar to that of the light-ion telescope; deduced resonance states from the resonant particle spectroscopy approach. In 2006Fr16, ^{22}Ne resonance states are reported from $^{14}C + ^{8}Be$ and in 2006Yi01 from $^{18}O + \alpha$ breakup measurements. 2006Yi01 concludes that α-cluster structure is suppressed in ^{22}Ne compared with that in ^{20}Ne.

2002Cu04: $^{14}C(^{18}O,^{10}Be)$: Target: ^{14}C of thickness 413 $\mu g/cm^2$ mounted between two thin (≈ 10 $\mu g/cm^2$) layers of formvar; Projectile: ^{18}O, E=102 MeV; breakup fragments of ^{22}Ne into ^{18}O and α were detected using two identical telescopes consisted of ΔE+E silicon detectors (68 and 1000 μm thick); deduced resonance states of ^{22}Ne.

^{22}Ne Levels

E(level)†	J^{π}&	Comments
12800?@		
14470#		
15.05×10³? *10*		E(level): Tentative level as it coincides with a possible contaminant from the decay of ^{20}Ne to $^{16}O + \alpha$. Not adopted.
17.48×10³ *10*		
17800@		
18.42×10³ *10*		
18700?@		
19.45×10³ *10*	$(6)^+$	
19.89×10³ *10*	$(10)^+$	E(level): Other: 20000 (2002Cu04).
20900@		
21.96×10³ *10*	$(9)^-$	
23300@		
24.14×10³‡ *20*		
26.89×10³‡ *20*		

† From 2006Yi01 ($^{18}O + \alpha$ measurements), except otherwise noted.
‡ From 2006Fr16 ($^{14}C + ^{8}Be$ measurements).
# From 2002Cu04.
@ Level noted as tentative in 2002Cu04, also not reported in 2006Yi01 and so not adopted by evaluator.
& From 2006Yi01 ($^{18}O + \alpha$ measurements) based on angular distribution measurements.