^{174}Yb(α,t) 1971On02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 102, 719 (2004)	1-Jun-2004

^{174}Yb 96% enriched targets. E(α)=30 MeV. Magnetic spectrograph(FWHM=15-20 keV). Measured triton spectra at two angles. Most L values are based on the ratios between (^{3}He,d) and (α,t) cross sections. These ratios show a strong L-transfer dependence. Band assignments are based on the Nilsson model and on the energy systematics of Nilsson orbitals in the neighboring ^{173}Lu and ^{175}Lu isotopes.

^{175}Lu Levels

E(level)[†]	J$^\pi$[‡]	L	S[#]	Comments
0[@]	7/2$^+$	4	0.77	
116[@]	9/2$^+$	4	0.048	L: based on exp S.
347	5/2$^+$& 1/2$^-$,5/2$^-$	1,2,3		Multiplet, J$^\pi$=5/2$^+$ member of 5/2[402] and J$^\pi$=1/2$^-$ and 5/2$^-$ members of 1/2[541]. S: 0.90 for L=1, 1.05 for L=2 and 0.86 for L=3 provided the entire cross section for this multiplet corresponds to the respective L value.
418[&]	(9/2)	5	1.06	
529	3/2$^-$ & (11/2$^-$)	1,5		Multiplet, J$^\pi$=3/2$^-$ member of 1/2[541] and J$^\pi$=11/2$^-$ member of 9/2[514]. S: 0.48 for L=1 and 0.86 for L=5 provided the entire cross section for this multiplet corresponds to the respective L value.
635				
679				
761				
≈866				
891				
1068[a]	(5/2)$^-$	3	0.05	
≈1180[a]	(7/2)$^-$	3	0.01	
1222				
1270[a]	(9/2)$^-$	5	0.35	
1317[b]	(3/2)$^-$	1	0.11	
1346	(3/2$^+$)	(2)	0.19	
1415[b]	(7/2)$^-$	3	0.42	
≈1437				
1513				
1566				
1609				
1638[b]	(11/2$^-$)	(5)	0.08	
1704[b]	(9/2$^-$)	(5)	0.11	
≈1752				
1797				
1899				

[†] ΔE≈2 keV for strongly populated states.
[‡] From Adopted Levels. Given only for states where an L assignment has been made.
[#] S=dσ(exp)/2dσ(DWBA) normalized to the theoretical value for the 5/2$^+$,5/2[402] state in ^{173}Lu and ^{175}Lu.
[@] 7/2(404) band.
[&] 1/2(541) band.
[a] 3/2(532) band.
[b] 1/2(530) band.