^{173}Yb(d,p),(d,pγ) 1967Bu21,1966Sh14,1967Bo08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, Huo Junde	NDS 87, 15 (1999)	1-Nov-1998

Target (^{173}Yb,J$^{\pi}$=5/2^{-}).
Target: enriched ^{173}Yb. Projectile: d, E=12 MeV. θ=60°, 90°. Measured scattered protons (1967Bu21), magnetic spectrometer.
Target: ^{173}Yb. Projectile: d, E=12 MeV, FWHM=14 keV, θ=27.5°, 55°, and 127°. Measured scattered protons (1966Sh14), magnetic spectrometer.
Target: 95% enriched ^{173}Yb. Projectile: d, E=12 MeV. Measured γ rays, ce, $\gamma\gamma$ coin, level half-life (1967Bo08), scin, magnetic spectrometer pulsed beam.

^{174}Yb Levels

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$	Comments
0.0[#]	0^{+}		
76[#d]	2^{+}		
252[#d]	4^{+}		
525[#d]	6^{+}		
1520[ad]	6^{+}	820 μs *50*	T$_{1/2}$: from 1967Bo08.
1559[@]	5^{-}		
1630[&]	2^{+}		E=1639 keV reported by 1966Sh14.
1667			
1702[&]	3^{+}		E=1715 keV reported by 1966Sh14.
≈1723			
1799[&]	4^{+}		E=1813 keV reported by 1966Sh14.
1841			Population intensity possibly contains contribution from impurity.
1876			
1926[&]	5^{+}		E=1935 keV reported by 1966Sh14.
1947			
2039			
2080			
2101			
2150			
2189[b]	2^{+}		
2213			
2237[b]	3^{+}		
2284[c]	3^{+}		
2333[b]	4^{+}		
2370[c]	4^{+}		
2407			
2450			
2482[c]	5^{+}		

[†] From 1967Bu21. ΔE<3 keV, but twice as high in 1.5-MeV region (1966Bu16,1967Bu21).
[‡] Spin, band, and quasiparticle configuration assignments are based on comparison between experimental and theoretical relative level intensity populations in (d,p) and (d,d′). A large two-quasiparticle ν 5/2[512] − ν 1/2[510] component in the γ-vibrational band is consistent with population to 1800-keV level. Population to 1559-keV level possibly indicates a large ν 9/2[624] − ν 5/2[512] component in the octupole-vibrational band.
[#] K$^{\pi}$=0^{+} g.s.-rotational band.
[@] K$^{\pi}$=2^{-} octupole-vibrational band.
[&] K$^{\pi}$=2^{+} γ-vibrational band.

Continued on next page (footnotes at end of table)

^{173}Yb(d,p),(d,pγ) 1967Bu21,1966Sh14,1967Bo08 (continued)

^{174}Yb Levels (continued)

[a] $K^{\pi}=6^{+}$ band. Probable configuration=ν 7/2[514] + ν 5/2[512].
[b] $K^{\pi}=2^{+}$ band. Probable configuration=ν 5/2[512] − ν 1/2[510].
[c] $K^{\pi}=3^{+}$ band. Probable configuration=ν 5/2[512] + ν 1/2[510].
[d] From (d,pγ) (1967Bo08).

γ(^{174}Yb)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
76		76	2^+	0.0	0^+		
176		252	4^+	76	2^+		
273	1000	525	6^+	252	4^+		
994	870 *16*	1520	6^+	525	6^+	(E2)	Mult.: from α(K)exp=0.0030 *5*, using α(K)(273γ,E2)=0.068, theory.
1265	35 *10*	1520	6^+	252	4^+		

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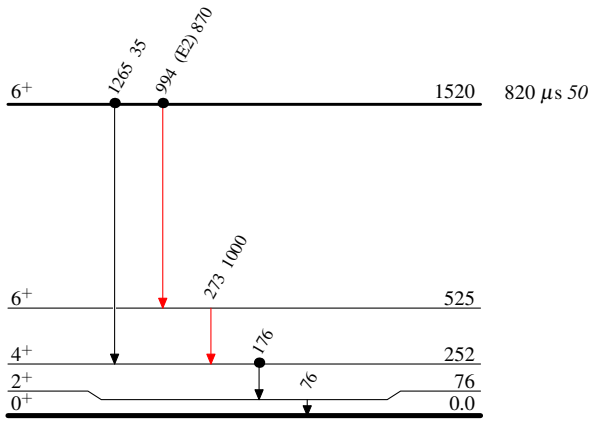
Level Scheme
Intensities: Relative I_γ

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
Coincidence



$^{174}_{70}Yb_{104}$