^{176}Yb(d,d′), (α,α′) 1967Bu21,1968He24,1970Ap03

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 107, 791 (2006)	15-Sep-2005

1967Bu21: (x,x′), x=d, E=12 MeV. Detector: magnetic spectrograph. Measured scattered deuterons at θ=90° and 125°. Cross section ratios at these angles, and the energy systematics of these states in other even Yb nuclei were used to identify quadrupole and octupole states. Other: 1966El07.

1968He24: (x,x′), x=a, E=50 MeV. Detector: lithium-drifted multicounter array, FWHM=50 keV. Measured angular distributions of scattered α′s. Deduced deformation parameters for the g.s. rotational band (β_2=0.276, β_4=−0.054).

1970Ap03: (x,x′), x=a, E=27.5, 30.0, and 32.5 MeV. Measured angular distribution of scattered α′s from θ=20° to 140°, at two or three degree intervals. Detector: semi, FWHM=25 keV. Deduced deformation parameters for the g.s. rotational band (β_2=0.230 *10*, β_4=−0.350 *10*). Other: 1972Yu03.

^{176}Yb Levels

E(level)[†]	J$^\pi$	$T_{1/2}$	Comments
0.0[a]	0$^+$[#]		
82[a]	2$^+$[#]		
270[a]	4$^+$[#]		
565[a]	6$^+$[#]		
955[a]	8$^+$[#]		E(level): from Adopted Levels, not observed in (d,d′).
1254[‡b]	2$^+$[&]	0.55 ps *4*	B(E2)=0.070 (1967Bu21). $T_{1/2}$: Deduced by evaluator from B(E2)=0.070, assuming 5% uncertainty.
1340	(4$^+$)[&]		
1429[b]	(4)$^+$[&]		
1491[‡]	(3$^-$)[@]		B(E3)=0.027 (1967Bu21).
1692			
1767			
1790	(3$^-$)[@]		

[†] From (d,d′), unless otherwise specified. ΔE=2-3 keV for low-energy levels, ΔE=5-6 keV otherwise (1967Bu21). Members of g.s. band were also seen in (α,α′).

[‡] Deduced value for the reduced excitation transition probability was based on the semi-empirical fact that the cross section is proportional to this quantity. The proportionality constant was obtained by interpolation from (d,d′) data for the even isotopes of Sm, Gd, Th, and U (1967Bu21).

[#] From agreement between experimental and theoretical (α,α′) cross sections.

[@] From (d,d′).

[&] From Adopted Levels.

[a] Band(A): K$^\pi$=0$^+$ g.s. rotational band.

[b] Band(B): K$^\pi$=2$^+$ γ-vibrational band.

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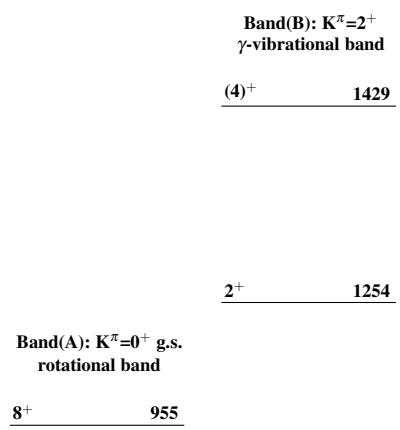

$^{176}_{70}Yb_{106}$