^{179}Hf(t,α) 1993Bu02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Achterberg, O. A. Capurro, G. V. Marti	NDS 110, 1473 (2009)	31-May-2008

1993Bu02: ^{179}Hf(t,α)^{178}Lu, E(t)=17 MeV. Reaction products were analyzed with an Enge split-pole spectrograph, with a position sensitive Si detector at the focal plane. Obtained spectra at 12° and from 15° to 45° in 5° steps. Also measured α spectra at 45° and 60° using photographic plates. The FWHM resolution was ≈20 keV for all spectra.

^{178}Lu Levels

E(level)	J$^{\pi}$[†]	T$_{1/2}$	Comments
0[‡]	1$^+$		
41[‡] *1*	2$^+$		
96 *4*	(3$^+$)		Possible member of $K^{\pi}=1^+$ g.s. rotational band.
123.8[@] *26*	9$^-$	23.1 min *3*	E(level),T$_{1/2}$: from Adopted Levels.
187[#] *1*	8$^+$		
215 *3*			
300 *4*	(5$^+$)		Possible member of $K^{\pi}=1^+$ g.s. rotational band.
334[@] *2*	10$^-$		
366 *3*			
475 *4*			
499 *2*	(7$^+$)		
656[&] *2*	4$^+$		
756[&] *2*	5$^+$		
834[a] *2*	5$^+$		
878[&] *2*	6$^+$		
906 *3*			
974[a] *2*	6$^+$		
1033 *3*			
1068 *2*			
1133 *2*			
1167 *3*			
≈1186?			
1215 *3*			
1255 *2*			
1290 *3*			
1341 *2*			

[†] From suggested rotational band structures, based on available Nilsson orbitals, and on a comparison of experimental angular distribution cross sections with theoretical values calculated with DWBA.
[‡] Band(A): $K^{\pi}=1^+$ ν 9/2$^+$[624] − π 7/2$^+$[404].
[#] Band(B): $K^{\pi}=8^+$ ν 9/2$^+$[624] + π 7/2$^+$[404].
[@] Band(C): $K^{\pi}=9^-$ ν 9/2$^+$[624] + π 9/2$^-$[514].
[&] Band(D): $K^{\pi}=(4^+)$ possible configuration: ν 9/2$^+$[624] − π 1/2$^+$[411].
[a] Band(E): $K^{\pi}=(5^+)$ possible configuration: ν 9/2$^+$[624] + π 1/2$^+$[411].

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Band(E): K^{π}=(5$^+$)

6$^+$ 974

Band(D): K^{π}=(4$^+$)

6$^+$ 878

5$^+$ 834

5$^+$ 756

Band(C): K^{π}=9$^-$ ν 9/2$^+$[624] + π 9/2$^-$[514]

4$^+$ 656

10$^-$ 334

Band(B): K^{π}=8$^+$ ν 9/2$^+$[624] + π 7/2$^+$[404]

8$^+$ 187

9$^-$ 123.8

Band(A): K^{π}=1$^+$ ν 9/2$^+$[624] – π 7/2$^+$[404]

2$^+$ 41

1$^+$ 0

$^{178}_{71}Lu_{107}$