^{178}Hf(p,t) 1973Oo01

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

$J^\pi(^{178}Hf)=0^+$.

Target: 89.14% enriched ^{178}Hf. Projectile: p, E=19 MeV. Detector: magnetic spectrograph, FWHM=10 to 12 keV. Angular distributions of scattered tritons were measured at θ=12.5°, 27.5°, 42.5°, and 55° to identify L=0 angular momentum transfers. L ≠ 0 transfers were tentatively identified by comparison of the data with shapes of angular distributions to well-known states.

^{176}Hf Levels

E(level)[†]	Jπ[‡]	L[#]	dσ/dΩ (μb/sr)[@]	E(level)[†]	Jπ[‡]	L[#]	dσ/dΩ (μb/sr)[@]
0.0[&]	0^+	0	813 *15*	1749[d] *10*	0^+	0	42 *4*
87[&] *10*	2^+	(2)	219 *9*	1796[d] *10*	(2^+)	(2)	14.7 *22*
287[&] *10*	4^+		44 *4*	1857 *10*			22 *3*
600[&] *10*	6^+		8.3 *15*	1953 *10*			5.9 *23*
1152[a] *10*	0^+	0	95 *5*	2049 *10*			17.4 *23*
1231[a] *10*	2^+	(2)	29 *3*	2069 *10*			12.0 *18*
1293[b] *10*	0^+	0	64 *5*	2089 *10*			10.7 *16*
1314 *10*			32 *3*	2136 *10*			18 *3*
1343[c] *10*	2^+	(2)	56 *4*	2286 *10*			23 *3*
1362 *10*			6.7 *25*	2304 *10*			7 *3*
1387[b] *10*	(2^+)	(2)	19.2 *25*	2348[e] *10*			20.5 *19*
1511 *10*			5.6 *11*	2389[f] *10*			25.4 *24*
1545[c] *10*	(4^+)		15.4 *19*	2415 *10*			14.1 *18*
1607 *10*			3.7 *21*	2448 *10*			15.1 *18*
1678 *10*			15.3 *18*				

[†] From 1973Oo01.
[‡] From L-values and rotational band structure.
[#] L-values were determined by comparison with shapes of angular distributions for transfers to known states. L=0 transfers have a very distinctive oscillatory pattern which gives a firm identification. Determination of L=2 transfers is more tentative.
[@] Sum of center-of-mass cross sections over standard angles.
[&] $K^\pi=0^+$ g.s. rotational band.
[a] $K^\pi=0^+$ band.
[b] $K^\pi=0^+$ band.
[c] $K^\pi=2^+$ band.
[d] $K^\pi=0^+$ band.
[e] Doublet.
[f] Possible doublet.