^{56}Fe(t,p),(pol t,p) 1967Co14,1977Bo11

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Caroline D. Nesaraja, Scott D. Geraedts and Balraj Singh	NDS 111, 897 (2010)	12-Jan-2010

1967Co14: (t,p) E=12 MeV, FWHM≈18 keV; measured $\sigma(\theta)$.
1977Bo11: (pol t,p) E=17 MeV, measured $\sigma(\theta)$, analyzing power; sequential transfer reaction calculations.
Additional information 1.
1980Al11: (pol t,p) E= 17 MeV, measured σ(E,θ), analyzing powers; θ(lab)=10°−60°. FWHM= 40 keV. Data taken in conjunction with those from 1977Bo11 to reduce statistical uncertainties. DWBA analysis.

^{58}Fe Levels

E(level)[†]	J^π	L[‡]	Comments
0.0		0	
810		2	
1670		2	
≈2120[#]	[#]		
2260		0	
2610		4	E(level): 2590 in 1980Al11. L: from 1980Al11, inconsistent with L=5,(6) (1967Co14).
2780[#]	1^+[#]		
2880		2	
3080		2	
3120			E(level): weakly populated level; possibly corresponds to known 4^+ level at 3135.
3240		0	
3540[#]	1^+[#]		
3630		2	
3750		(4)	
3790		(5)	
3880		3	
4010		2	
4090		4	
4170		0	
4210		(6)	L: adopted J=(5) is inconsistent with proposed L=(6).
4290		2,(3)	
4340		(5,4)	
4350		(0)	
4440		(5,4)	
4450		(0)	
4470		3,(2)	
4630		2	
4670[&]		(2+8)	Additional information 2.
4720		1	
4810[&]		6,(5)	
4890		2	
4960		2	
4990		2,(3)	
5020		5	
5060		2	
5150		0	
5220		2	
5260		3	
5300			
5370		(4,5)	
5410		0	
5470		(2)	

Continued on next page (footnotes at end of table)

^{56}Fe(t,p),(pol t,p) 1967Co14,1977Bo11 (continued)

^{58}Fe Levels (continued)

E(level)†	L‡	E(level)†	L‡	E(level)†	L‡	E(level)†	L‡
5520	0	5950	(2)	6400	6+7	6870	(5)
5600	0	6050@		6440	1	6910	1
5650	2	6150	2	6460	0	6960	2
5740	2	6180	(0)	6580	(6)	7040	1+2
5790	2,(3)	6220	1+2	6650	0	7120	0
5830	0	6270	1+2	6760	0	7170	1
5880	2+3	6320@		6840	0+1+2		

† From 1967Co14; ΔE≈20 keV.
‡ From the location of the first peak in the angular distribution pattern (1967Co14).
# $\sigma(\theta)$exp is reproduced for unnatural parity using two-step processes, 1^+ for 2780 and 3540, and 3^+ for 2120 (1977Bo11).
@ Doublet; L not determined.
& Possible doublet.