$^{54}\text{Fe}(^{3}\text{He},d),(\text{pol }^{3}\text{He},d)$ 1977Fo06,1981Ka38

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Huo Junde	NDS 109, 787 (2008)	30-Apr-2007

1977Fo06: E=25 MeV; enriched (96%) self-supporting targets; split-pole spectrometer with 8 silicon position-sensitive detectors; measured $\sigma(ED,\theta),dp(\theta)$; DWBA analysis.

1981Ka38: E=33 MeV; polarized beam; enriched (99%) targets; ΔE-E silicon detector telescopes; measured $\sigma(\theta)$ and analyzing powers (the sensitivity of analyzing power to total angular momentum transfer allows model-independent determination of spin); DWBA analysis.

See also 1965Ar06, 1966Oh02, 1967Ro04, and 1982Ma04.

All data are from 1977Fo06, except as noted.

^{55}Co Levels

E(α,C,D) Isobaric analog state of ^{55}Fe level.

E(level)	J^{π}	L	C^2S'	Comments
0.0[‡]	7/2⁻[‡]	3	1.68[‡]	
2165[‡] *10*	3/2⁻[‡]	1	1.27[‡]	
2565[‡] *10*	3/2⁻[‡]	1	0.83[‡]	
2935[†‡] *15*	1/2⁻		0.46	
3302[‡] *10*	5/2⁻[‡]	3	2.70[‡]	
3323[‡] *10*	1/2⁻[‡]	1	0.47[‡]	
3642[‡] *10*	3/2⁻[‡]	1	0.23[‡]	
3704 *10*	(1/2,3/2)⁻	1	0.01	
3858 *10*				
3942 *10*	(1/2,3/2)⁻	1	0.02	
4165[‡] *10*	1/2⁻[‡]	1	0.44[‡]	
4177[‡] *10*	5/2⁻[‡]	3	1.32[‡]	
4545 *10*	(5/2)⁻	3	0.04	
4627 *10*	(1/2,3/2)⁻	1	0.05	
4726[‡] *10*	3/2⁻[‡]	1	0.45[‡]	T=3/2 E(level): IAS of ^{55}Fe(g.s.); ΔE(Coul.)=8986 keV *16* in ^{55}Fe-^{55}Co pair. C^2S': from 1977Fo06.
4752[‡] *10*	(3/2)⁻[‡]	1	0.37[‡]	T=3/2 E(level): IAS of ^{55}Fe(g.s.); ΔE(Coul.)=8986 keV *16* in ^{55}Fe-^{55}Co pair. C^2S': from 1977Fo06.
4853 *10*				
5110 *10*				
5172[‡] *10*	1/2⁻[‡]	1	0.32[‡]	T=3/2 E(level): IAS of ^{55}Fe(411 level); ΔE(Coul.)=9006 keV *13* in ^{55}Fe-^{55}Co pair.
5263 *10*				
5354 *10*				
5550 *10*	(1/2,3/2)⁻	1	0.16	
5749[‡] *10*	5/2⁻[‡]	3	1.06[‡]	T=3/2 E(level): IAS of ^{55}Fe(931 level); ΔE(Coul.)=9056 keV *13* in ^{55}Fe-^{55}Co pair.
5792 *10*	(5/2)⁻	(3)	0.10	
5856 *10*				
5883 *10*	(1/2,3/2)⁻	1	0.04	
5940 *10*				
5990 *10*				
6012 *10*	(1/2,3/2)⁻	1	0.07	

^{54}Fe(^{3}He,d),(pol ^{3}He,d)   **1977Fo06,1981Ka38** **(continued)**

^{55}Co Levels (continued)

E(level)	J$^\pi$	L	C^{2}S′	Comments
6066‡ *10*	9/2$^{+\ddagger}$	4	1.81‡	
6099 *10*	(7/2)$^-$	3	0.12	E(level): IAS of ^{55}Fe(1317 level); ΔE(Coul.)=9030 keV *13* in ^{55}Fe-^{55}Co pair.
6147 *10*	(5/2)$^+$	2	0.03	
6207 *10*	5/2$^+$	2	0.08	
6263 *10*	(5/2)$^-$	3	0.08	
6326 *10*	3/2$^-$	1	0.08	
6368 *10*	5/2$^+$	2	0.04	
6448 *10*	(5/2)$^-$	3	0.07	
6514 *10*				
6600 *10*	(9/2)$^+$	4	0.19	
6673 *10*	(5/2)$^-$	3	0.07	
6709 *10*		1	0.05	E(level): IAS of ^{55}Fe(1919 level); ΔE(Coul.)=9038 keV *15* in ^{55}Fe-^{55}Co pair.
6750 *10*				
6775 *10*	3/2$^{(-)}$	(1)		
6830† *15*	3/2$^-$	1,(3,4)	0.09	E(level): IAS of ^{55}Fe(2052 level); ΔE(Coul.)=9026 keV *18* in ^{55}Fe-^{55}Co pair.
6896 *10*	5/2$^-$	3	0.15	E(level): IAS of ^{55}Fe(2144 level); ΔE(Coul.)=9014 keV *17* in ^{55}Fe-^{55}Co pair.
6916 *10*	5/2$^-$	3	0.30	E(level): IAS of ^{55}Fe(2144 level); ΔE(Coul.)=9014 keV *17* in ^{55}Fe-^{55}Co pair.
7045 *10*		(1)	0.01	
7110 *10*	(9/2)$^+$	4	0.61	
7239 *10*	(9/2)$^+$	4	0.10	
7275 *10*	3/2$^-$	1	0.13	E(level): IAS of ^{55}Fe(2471 level); ΔE(Coul.)=9052 keV *16* in ^{55}Fe-^{55}Co pair.
7292 *10*				
7323 *10*				
7400 *10*	3/2$^{(-)}$			
7467 *10*	3/2$^{(-)}$	(1)	(0.06)	
7534 *10*	3/2$^{(-)}$	(1)	(0.04)	
7576 *10*	(3/2)$^+$	2	0.02	
7624 *10*	3/2$^+$	2	0.05	
7654 *10*	5/2$^-$	3	0.07	
7707 *10*	(5/2)$^-$	3	0.05	
7747 *10*	(5/2)$^-$	3	0.06	
7768 *10*	3/2$^{(-)}$	(1)	0.08	
7888 *10*	(5/2)$^+$	2	0.10	
7966 *10*	5/2$^+$	2	0.12	
8026 *10*	(5/2)$^-$	3	0.08	
8068 *10*	(5/2)$^-$	3	0.07	
8105 *10*	(5/2)$^-$	3	0.06	
8132 *10*	5/2$^+$	2	0.88	
8172 *10*	(1/2,3/2)$^-$	1	0.07	
8231 *10*	(5/2)$^+$	2	0.07	
8259 *10*	9/2$^+$	4	0.13	
8290 *10*	(5/2)$^-$	3	0.12	
8380† *15*	(3/2,5/2)$^-$			E(level): IAS of ^{55}Fe(3553 level); ΔE(Coul.)=9075 keV *19* in ^{55}Fe-^{55}Co pair. L: L=1 for J$^\pi$=3/2$^-$; L=3 for J$^\pi$=5/2$^-$. C^{2}S′: C^{2}S′=0.11 for J$^\pi$=3/2$^-$; C^{2}S′=0.10 for J$^\pi$=5/2$^-$.
8418 *10*	(5/2)$^+$	2	0.22	
8465‡ *15*	9/2$^{+\ddagger}$		2.71‡	T=3/2 E(level): IAS of ^{55}Fe(3814 level); ΔE(Coul.)=8899 keV *24* in ^{55}Fe-^{55}Co pair.
8557 *10*	(1/2,3/2)$^-$	1	0.07	
8640 *10*	(5/2)$^+$	2	0.02	
8663 *10*	(9/2)$^+$	4	0.08	
8697 *10*	(9/2)$^+$	4	0.08	
8746 *10*	(5/2)$^+$	2	0.09	
8814 *10*	5/2$^-$	3	0.34	E(level): IAS of ^{55}Fe(4028 level); ΔE(Coul.)=9034 keV *16* in ^{55}Fe-^{55}Co pair.

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^{54}**Fe(^{3}He,d),(pol ^{3}He,d)**   **1977Fo06,1981Ka38 (continued)**

^{55}Co Levels (continued)

E(level)	J$^{\pi}$	L	C^{2}S′	Comments
8901 *10*				
8961 *10*				
9004 *10*	5/2$^+$	2	0.09	
9065 *10*				
9125 *10*	5/2$^+$	2	0.23	E(level): IAS of ^{55}Fe(4463 level); ΔE(Coul.)=8910 keV *16* in ^{55}Fe-^{55}Co pair.
9194 *10*		(2)	(0.02)	
9245†‡ *15*	5/2$^+$	2	0.07	
9303 *10*	3/2$^{(-)}$	(1)	(0.32)	
9424 *10*		4	0.04	
9463 *10*		4	0.15	
9540 *10*		4	0.15	
9601 *10*		4	0.07	
9642 *10*				
9721 *10*	(9/2)$^+$	4	0.09	
9758 *10*	(9/2)$^+$	4	0.10	
9793 *10*	(5/2)$^+$	(2)	0.10	
9863 *10*				
9899 *10*				
9942 *10*				

† Unresolved doublet.
‡ From 1981Ka38.

^{54}**Fe(^{3}He,d),(pol ^{3}He,d)**   **1977Fo06,1981Ka38 (continued)**