

$^{57}\text{Fe}(\text{d,t}), (\text{pol d,t}), (^3\text{He},\alpha)$ 1981Bi04,1971Ma58,1969Da04

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Huo Junde, Huo Su, Yang Dong		NDS 112, 1513 (2011)	29-Oct-2009

Includes: (pol p,d), (p,d).

Others: 1964Le10, 1962Go16, 1962Bi06.

$J^\pi(^{57}\text{Fe})=1/2^-$.

For $^{57}\text{Fe}(\text{d,t}), (\text{pol d,t})$:

1969Da04: E=11.7,14.5 MeV, FWHM of 5-9 keV, measured $\sigma(E(t),\theta)$, DWBA analysis.

1981Bi04: E=11 MeV, vector polarized beam, measured $\sigma(E(t),\theta)$ and vector-analyzing power.

For $^{57}\text{Fe}(\text{pol p,d}), (\text{p,d})$:

1971Ma58: E=20 MeV, polarized beam, measured $\sigma(\theta)$ and $A(\theta)$, DWBA analyses.

1962Go16: E=22.3 MeV, measured $\sigma(E(d),\theta)$.

1964Le10: E=17 MeV, measured $\sigma(E(d),\theta)$.

For $^{57}\text{Fe}(^3\text{He},\alpha)$:

1962Bi06: E=14.3 MeV, measured $\sigma(E\alpha,\theta)$, DWBA analyses.

All data from 1969Da04, except as noted.

 ^{56}Fe Levels

E(level)	L [†]	S [‡]	Comments
0	1	0.10	S: others: 0.099 (1981Bi04), 0.07 (1971Ma58), 0.077 (1962Bi06).
847 [#]	1+3 [#]	0.31+0.36 [#]	S: others: 0.24+0.084 for L=1+3 (1981Bi04), 0.43+0.4 for L=1(+3) (1969Da04).
2085	3	0.15	S: other: 0.042 (1962Bi06).
2654	1	0.034	S: other: 0.034 (1981Bi04).
2939	1	0.11	
2957	1	0.33	E(level): may be composed of 2942 and 2960. S: other: 0.12 if J=1/2 or 0.33 if J=3/2 for L=1 neutron transfer (1981Bi04).
3090 [@]	1 [@]	0.24 [@]	
3121	1(+3)	0.26+0.3	S: other: 0.24 if J=1/2 or 0.084 if J=3/2 for L=1 neutron transfer (1981Bi04).
3367	1+3	0.014+0.0 4	
3386			
3444	1(+3)	0.06+0.1	J^π : J=1 ⁺ ,2 ⁺ for L=1, J=(3 ⁺) for L=(3).
3599	1	0.19	
3747			
3828	3	0.08	
3856	3	0.19	
4049	3	0.16	
4101	3	0.02	
4119	3	1.0	
4298	3	0.47	S: other: 3.2 (1962Go16).
4398	1+3	0.01+0.02	J^π : J=2 ⁺ for L=1, J=3 ⁺ ,(4) ⁺ for L=3.
4460	3	0.24	
4510			
4542	1	0.025	
4554	3	0.04	
4610	3+1	0.29+0.01	J^π : J=4 ⁺ for L=3, J=2 ⁺ for L=1.
4660	3	0.65	
4686	3	0.11	
4744	3(+1)	0.06+0.01	J^π : J=(0 ⁺) for L=(1), J=2 ⁺ ,3 ⁺ ,4 ⁺ for L=3.
4822			
4876			
5044			
5062			

Continued on next page (footnotes at end of table)

$^{57}\text{Fe}(\text{d,t}), (\text{pol d,t}), (^3\text{He},\alpha)$ [1981Bi04](#), [1971Ma58](#), [1969Da04](#) (continued)

^{56}Fe Levels (continued)

[†] Based on $\sigma(\theta)$ fits with DWBA.

[‡] From DWBA.

[#] From [1971Ma58](#).

[@] From [1964Le10](#).