

$^{54}\text{Fe}(\text{d,p}),(\text{pol d,p})$ [1972Ko41](#),[1964Sp03](#),[1980Ta05](#)

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

[1963Fu04](#): E=15 MeV; enriched target (≈ 2 mg/cm²); wedge magnet spectrograph, system resolution: ≈ 45 keV, 9° to 50° ; measured $\sigma(\theta)$; DWBA analyses.

[1964Sp03](#): E=6.5, 7.0 MeV; enriched target (96.66%); 50-cm broad-range single-gap spectrograph; measured proton spectra.

[1964Ma15](#): E=7.8 MeV; thin enriched target (97.6%), double-focusing magnetic spectrometer, overall resolution: ≈ 20 keV; -10° to $+95^\circ$; measured $\sigma(\text{E}(\text{p}),\theta)$; DWBA analysis.

[1972Ko41](#): E=10 MeV; enriched target (95.0%, 2.3 mg/cm²); purely vector polarized beam; silicon surface-barrier detectors, energy resolution: 35-70 keV; 15° – 85° ; measured polarization parameters and $\sigma(\text{ED}; \text{E}(\text{p}),\theta)$.

[1980Ta05](#): E=10 keV; enriched target (96.81%); vector and tensor pol-beam; 2-mm thick Si(Li) counters, resolution range: 30-50 keV for E(p)=15 MeV; measured analyzing power and $\sigma(\text{E}(\text{p}),\theta)$ (25° – 80° in 5° steps); DWBA analyses.

See also [1964Bj01](#), [1964Bo08](#), and [1968Gr18](#).

 ^{55}Fe Levels

E(level) [†]	J ^π @	L&	S ^a	Comments
0.0	3/2 ⁻	1	3.1	
413 <i>IO</i>	1/2 ⁻	1	1.2	
933 <i>IO</i>	5/2 ⁻	3	3.9	
1317 [‡]	7/2 ⁻	3	0.36	
1409 [‡]	7/2 ⁻	3	$\approx 0.14^{\#}$	
1919 [‡]	1/2 ⁻	1	0.20	
2052 [‡]	3/2 ⁻	1	0.35	
2144 [‡]	5/2 ⁻	3	0.92	
2218 <i>IO</i>				
2307 <i>IO</i>				
2471 [‡]	3/2 ⁻	1	0.68	
2546 <i>IO</i>				
2585 <i>IO</i>		(3,4)		1963Fu04 : L=3, S'=0.184; L=4, S'=0.414. 1972Ko41 : L=3, S'=0.30.
2818 <i>IO</i>				
2880 <i>IO</i>				
2940 <i>IO</i>				
2987 <i>IO</i>				
3035 <i>IO</i>	3/2 ⁻	1	0.10	
3076 <i>IO</i>				
3119 <i>IO</i>				
3311 <i>IO</i>				
3362 <i>IO</i>				
3431 <i>IO</i>				
3469 <i>IO</i>				
3553 [‡]	3/2 ⁻	1	0.48	
3599 <i>IO</i>				
3661 <i>IO</i>				
3709 <i>IO</i>				
3722 <i>IO</i>				
3800 <i>IO</i>		1	1.2	
3814				E(level): value from 1966Ge05 .
3860 <i>IO</i>		4	$\approx 7.4^{\#}$	
3916 <i>IO</i>		1	$0.070^{\#}$	
$3.96 \times 10^3?$				
4028 <i>IO</i>				
4057 <i>IO</i>	(5/2 ⁻)	3	0.35	

Continued on next page (footnotes at end of table)

$^{54}\text{Fe}(\text{d,p}),(\text{pol d,p})$ 1972Ko41,1964Sp03,1980Ta05 (continued) ^{55}Fe Levels (continued)

E(level) [†]	J ^π @	L&	S ^a	E(level) [†]	J ^π @	L&	S ^a
4110 10				6167 10		2	0.460 [#]
4123 10				6229 10			
4273 10				6237 10			
4372 10				6282 10	1/2 ⁺	0	0.270 [#]
4387 10				6319 10			
4463 10	5/2 ⁺	2	0.91	6348 10			
4507 10		1		6374 10			
4538 [#] 10		(1)	≈0.09 [#]	6387 10			
4636 10				6410 10			
4658 10				6425 10			
4673 10				6456 10			
4707 10	5/2 ⁺	2	0.27	6495 10		2	0.565 [#]
4751 10				6524 10			
4790 10				6579 10			
4824 10				6596 10			
4849 10				6610 10			
4877 10				6628 10		2	0.342 [#]
4948 10				6654 10			
4990 10				6670 10			
4999 10				6745 10			
5041 10				6776 10		2	0.496 [#]
5078 10				6826 10			
5124 10		1	0.046 [#]	6846 10			
5185 10				6857 10			
5208 10				6874 10			
5237 10				6916 10		2	≈0.29 [#]
5286 10				6962 10	1/2 ⁺	0	≈0.05 [#]
5306 10				6980 10			
5326 10				7008 10			
5363 10				7030 10			
5.37×10 ³ ?				7054 10			
5394 [#] 10		2 ^b	0.106 [#]	7070 10			
5435 10				7092 10			
5445 10				7105 10			
5480 10				7126 10			
5497 10				7149 10			
5542 10				7178 10			
5556 10				7215 10			
5564 10		2	0.037 [#]	7235 10			
5599 10				7252 10		2	0.603 [#]
5634 10				7270 10			
5687 10		0	0.187 [#]	7310 10			
5745 10				7360 10			
5775 10	1/2 ⁻	1	0.09	7369 10		2	0.212 [#]
5817 10				7382 10			
5839 10				7419 [#] 10		2+(0)	≈0.12+0.04 [#]
5872 10				7.45×10 ³ ?			
5900 10		2	0.140 [#]	7.47×10 ³ ?			
5933 10				7614 [#]		2	0.276 [#]
5947 10				7808 [#]		2+(0)	≈0.16+0.06 [#]
5955 10	(1/2 ⁺)	(0)	0.028 [#]	7853 [#]		2	≈0.13 [#]
5989 10				7938 [#]			
6059 10		2	0.193 [#]	8000 [#]			

⁵⁴Fe(d,p),(pol d,p) 1972Ko41,1964Sp03,1980Ta05 (continued)

⁵⁵Fe Levels (continued)

<u>E(level)[†]</u>	<u>J^π@</u>	<u>L&</u>	<u>S^a</u>	<u>E(level)[†]</u>	<u>J^π@</u>	<u>L&</u>	<u>S^a</u>
6090 10				8028 [#]		2	0.082 [#]

$^{54}\text{Fe}(\text{d,p}),(\text{pol d,p})$ 1972Ko41,1964Sp03,1980Ta05 (continued) **^{55}Fe Levels (continued)**

$E(\text{level})^\dagger$	$L\&$	S^a	$E(\text{level})^\dagger$	$J^\pi@$	$L\&$	S^a	$E(\text{level})^\dagger$	$J^\pi@$	$L\&$	S^a
$8.13 \times 10^3\#$	(2)	$\approx 0.18\#$	$8514\#$		2	$0.106\#$	$8910\#$	$1/2^+$	0	$\approx 0.14\#$
$8.18 \times 10^3\#$	(2)	$\approx 0.18\#$	$8560\#$	$(1/2^+)$	(0)	$\approx 0.07\#$	$9007\#$		2	$0.42\#$
$8264\#$	2	$0.195\#$	$8796\#$		2	$0.141\#$				
$8400\#$			$8843\#$	$1/2^+$	0	$\approx 0.15\#$				

 † From 1964Sp03, except as noted. ‡ From 1980Za05. $\#$ From 1963Fu04. $@$ From 1980Ta05 and 1972Ko41, based on J dependence of analyzing power, except as noted. $\&$ From 1963Fu04, except as noted. a S' from average values of 1963Fu04 and 1972Ko41, except as noted. b L=1 in 1964Ma15.