

$^{54}\text{Fe}(\text{}^3\text{He},\alpha)$ , (pol  $^3\text{He},\alpha$ ) 1978Fo34,1981Ka38

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Huo Junde	NDS 110,2689 (2009)	31-Mar-2007

1981Ka38: polarized  $^3\text{He}$ ; E=33 MeV, FWHM $\approx$ 250 keV,  $\theta(\text{c.m.})=12.5^\circ-60^\circ$ , measured  $\sigma(\theta)$ ,  $\Delta E$ -E silicon detector telescopes.

1978Fo34: E=25 MeV FWHM $\approx$ 20-25 keV,  $\theta(\text{lab})=5^\circ-40^\circ$ , measured  $\sigma(E,\theta)$ , silicon position-sensitive detectors, 700 UM or 1000 UM thick, placed in the focal plane of a split-pole spectrometer, DWBA, coupled reaction channel analyses.

1977Se08: E=18 MeV,  $\theta\approx 40^\circ$ , measured  $\sigma(E,\theta)$ , a multichannel magnetic spectrograph.

1968Tr01: E=13 MeV, FWHM=30 keV, measured  $\sigma(E,\theta)$ , multiple-gap magnetic spectrograph, nuclear emulsions.

Others: 1967Bo39, 1962B106.

All data are from 1978Fo34, except as noted.

 $^{53}\text{Fe}$  Levels

E(level)	$J^\pi$ <sup>†</sup>	L	$C^2S^b$	Comments
0.0	$7/2^- \ddagger$	3	3.58	
740 12	$3/2^-$	(1)	0.08	
1327 12	$9/2^- \#$			
1426 12	$5/2^-$	3	0.06	
1693 12	$7/2^- \ddagger$			E(level): from 1981Ka38.
2050 12	$3/2^-$	1	0.05	
2297 12	$1/2^+$	0	0.03	
2343 12				
2398 12	$5/2^- \#$			
2680 12	$(3/2^+)$	2	0.02	
2837 12	$(7/2)^-$	3	0.36	
2892 &				
2926 @ 12	$(1/2^+)$	(0)		
2968 12	$1/2^+ \ddagger$	0	1.24 <sup>a</sup>	
3330 12	$7/2^- \ddagger$	3	0.65 <sup>a</sup>	
3396 12	$3/2^+ \ddagger$	2	1.09 <sup>a</sup>	
3567 12	$(7/2)^-$	3	0.34	
3703 12	$(3/2)^-$	1	0.04	
3785 12	$(7/2)^-$	3	0.04	L: other: L=(1) (1977Se08).
3813 12	$(3/2)^-$	1	0.02	
3854 12	$(3/2)^-$	1	0.02	
3897 12				
4170 @ 12	$(3/2)^+$	2	0.03	
4264 12	$7/2^- \ddagger$	3	2.46	
4575 15	$(3/2)^+$	2	0.03	
4637 15	$(7/2)^-$	3	0.03	
4698 15				
4839 15	$(7/2)^-$	(3)	0.03	
4901 15	$(7/2)^-$			
5200 15	$(3/2)^+$	2	0.07	
5438 15	$(3/2)^+$	2	0.19	
5536 15	$(3/2)^-$	(1)	0.04	
5577 15	$(3/2)^+$	2	0.05	L: other: L=1 (1977Se08).
5672 15				
5722 &				
6002 @ 15	$(3/2^+)$	(2)	0.02	
6110 @ 15	$(3/2^+)$	(2)	0.06	
6294 @ 15				

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$^{54}\text{Fe}(^3\text{He},\alpha)$ , (pol  $^3\text{He},\alpha$ ) **1978Fo34,1981Ka38** (continued) $^{53}\text{Fe}$  Levels (continued)

<u>E(level)</u>	<u><math>J^\pi</math></u> <sup>†</sup>	<u>L</u>	<u><math>C^2S^b</math></u>	<u>E(level)</u>	<u><math>J^\pi</math></u> <sup>†</sup>	<u>L</u>	<u><math>C^2S^b</math></u>	<u>E(level)</u>	<u><math>J^\pi</math></u> <sup>†</sup>	<u>L</u>	<u><math>C^2S^b</math></u>
6418 15				6820 20				7213 20	(3/2) <sup>+</sup>	2	0.13
6449 15	(3/2) <sup>+</sup>	2	0.07	6845 20				7273 20	3/2 <sup>+</sup> <sup>‡</sup>	2	0.86
6528 20	(7/2) <sup>-</sup>	3	0.04	6958 20	1/2 <sup>+</sup>	0	0.11	7307 20	(3/2) <sup>+</sup>	2	0.18
6583 20	(3/2) <sup>-</sup>	1	0.08	7042 20	1/2 <sup>+</sup> <sup>‡</sup>	0	0.62	7372 20	(3/2) <sup>+</sup>	2	0.13
6696 20	(3/2) <sup>+</sup>	2	0.04	7135 20							

<sup>†</sup> Adopted values, except as noted. Values in parentheses were assumed for calculation of  $C^2S$ .

<sup>‡</sup> From analyzing power data (1981Ka38).

# From coupled reaction channel analysis (1978Fo34).

@ Doublet.

& From 1977Se08.

<sup>a</sup> From 1981Ka38.

<sup>b</sup> From DWBA.