

$^{56}\text{Fe}(\text{d}, ^3\text{He})$  1983Pu02

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

E=80 MeV,  $\Delta E$ -E silicon surface-barrier detector telescopes particle identification method, Ge(Li) beam monitor; measured  $\sigma(E, \theta)$ ;

DWBA analysis, shell-model, quasiparticle-core coupling cluster vibration model calculations; extracted S and L based on the shape of  $\sigma(\theta)$  and DWBA analyses, assumed  $J^\pi$ .

 $^{55}\text{Mn}$  Levels

S Experimental summed strengths are:

$\Sigma \backslash S(f7/2)=3.50$ ,  $\Sigma \backslash S(f5/2)=0.19$ ,

$\Sigma \backslash S(p3/2)=0.24$ ,  $\Sigma \backslash S(s1/2)=0.94$ ,

$\Sigma \backslash S(d3/2)=3.19$ ,  $\Sigma \backslash S(d5/2)=0.40$ .

Experimental values of  $\Sigma \backslash S(f7/2)$  and  $\Sigma \backslash S(p3/2)$

are 3.59 and 0.32 for  $0 < E(\text{level}) < 4.5$  MeV.

E(level)	$J^\pi$	L	S	Comments
0.0	$5/2^-$	3	0.11	
126 40	$7/2^-$	3	2.88	
980 40				
1290 40				
1530 40	$3/2^-$	1	0.15	
1880 40	$7/2^-$	3	0.07	
2200 20	$7/2^-$	3	0.38	
2270 40	$5/2^-$	(3)	0.08	
2370 40				
2426 20	$1/2^+$	0	0.84	
2560 40	$3/2^-$	(1)	0.04	
2727 <sup>†</sup> 20	$3/2^+$	2	1.72	E(level): no $\pi=+$ level in Adopted Levels at $\approx 2727$ . Possibly corresponds to 2741 in ( $\alpha, p$ ).
2990 40	$7/2^-$	3	0.17	
3040 40	$3/2^+, 5/2^+$	2	0.28, 0.19	
3150 40				
3420 40	$3/2^+$	2	0.35	
3600 40	$5/2^-, 7/2^-$	3	0.13, 0.09	
3770 40				
3880 40	$1/2^-, 3/2^-$	(1)	0.03	
3990 40	$3/2^-$	(1)	0.02	
4100 <sup>†</sup> 40	$3/2^-$	(1)	0.03	
4220 <sup>†</sup> 40	$3/2^-$	(1)	0.05	
4580 <sup>†</sup> 40	$3/2^+$	2	0.22	
4900 <sup>†</sup> 40	$3/2^+$	2	0.21	
5110 40	$3/2^+$	2	0.21	
5230 40	$(3/2^+) \& (3/2^-)$	(2)+(1)	(0.12+0.04)	
5350 40	$3/2^+$	2	0.25	
5400 40	$(1/2^+) \& (3/2^+)$	(0)+(2)	(0.04+0.15)	
5500 <sup>†</sup> 40	$3/2^+$	(2)	0.11	
5960 40	$1/2^+$	(0)	0.06	
7230 40	$3/2^+, 5/2^+$	2	0.31, 0.21	

<sup>†</sup> Possibly doublet. May be distinct from the levels given in Adopted Levels.