^{54}Fe(p,nγ) 2000Sc06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yang Dong, Huo Junde	NDS 121, 1 (2014)	20-Jun-2014

2000Sc06: E=13 MeV. Measured Eγ, γγ, Iγ, γγ(θ) using five Compton-suppressed Ge detectors and one Compton-suppressed cluster detector in the Cologne-Coincidence-Cube-Spectrometer. See also 2002Vo12.
2004Vo04: E=15 MeV. Measured Eγ, γγ, Iγ, γγ(θ) using In-beam γ-ray spectroscopy.
1971Ki17: E=10.8-16 MeV. Ge(Li), plastic scintillator, nγ-coincidence, tof, measured γ and neutron tof spectra with cyclotron pulsing.
1971Sa05: E=10.4-12 MeV. Ge(Li), scin, nγ-coincidence, proportional counter, measured neutron and γ angular distributions.
All data are from 2000Sc06, except As noted.

^{54}Co Levels

E(level)[†]	J^π	Comments
0	0^+	
197.1 *4*	$(7)^+$	
936.91 *15*	1^+	
1445.65 *15*	2^+	
1614.09 *17*	1^+	
1821.61 *21*	$(3)^+$	T=0 (2004Vo04)
1887.1 *3*	(5^+)	T=0 (2004Vo04)
2082.9 *3*		
2149.4 *5*	5^+	
2173.66 *18*	3^+	
2289.29 *25*	(3)	
2652.06 *24*	4^+	T=1 (2004Vo04)
2657.2 *9*		
2851.4 *3*	4^+	T=0 (2004Vo04)
2913.9 *11*		
2919.2 *11*	(3)	
3094.7 *8*		
3109.2 *8*		
3142.7 *7*		
3155.6 *6*		
3166.5 *11*		
3265.3 *8*		
3306.9 *11*		
3325.9 *11*		
3346.0 *11*		
3399.3 *9*		
3504.0 *11*		
4078.4 *11*		

[†] From least-squares fit to Eγ's.

γ(^{54}Co)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ
195.8 *2*	42 *4*	2082.9		1887.1	(5^+)		
261.3 *2*	100 *3*	2082.9		1821.61	$(3)^+$		
376.0 *2*	100 *3*	1821.61	$(3)^+$	1445.65	2^+	M1(+E2)	−0.01 *5*
490.4[‡]		3142.7		2652.06	4^+		
508.7 *2*	100 *2*	1445.65	2^+	936.91	1^+	M1(+E2)	+0.02 *3*

Continued on next page (footnotes at end of table)

^{54}Fe(p,nγ) 2000Sc06 (continued)

γ(^{54}Co) (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ	Comments
559.6 *2*	97 *10*	2173.66	3^+	1614.09	1^+	E2		
673.8[‡]		3325.9		2652.06	4^+			
728.0 *3*	100 *10*	2173.66	3^+	1445.65	2^+	M1(+E2)	+0.01 *5*	E_γ: from table 1 of 2000Sc06. Eγ=727.8 in figure 2.
742.1[‡]		3399.3		2657.2				
765.0 *2*	57 *2*	2652.06	4^+	1887.1	(5^+)	M1(+E2)	+0.04 *6*	
830.4 *2*	100 *3*	2652.06	4^+	1821.61	$(3)^+$	M1(+E2)	+0.00 *3*	δ: from 2004Vo04. Other: −0.02 *3* (2000Sc06).
831.0[‡]		2913.9		2082.9				
843.6 *2*		2289.29	(3)	1445.65	2^+	D(+Q)	−0.03 *4*	
866.1[‡]		3155.6		2289.29	(3)			
884.6 *4*	2.2 *3*	1821.61	$(3)^+$	936.91	1^+	E2		
936.8 *2*		936.91	1^+	0	0^+	M1		
964.3 *2*	51 *3*	2851.4	4^+	1887.1	(5^+)			
975.6[‡]		3265.3		2289.29	(3)			
1029.8 *2*	100 *3*	2851.4	4^+	1821.61	$(3)^+$	M1+E2	+0.12 *4*	δ: from 2004Vo04. Other: +0.10 *4* (2000Sc06).
1043.1[‡#]		2657.2		1614.09	1^+			
1072.9[‡]		3155.6		2082.9				
1172.3[‡]		3346.0		2173.66	3^+			
1182.9[‡]		3265.3		2082.9				
1206.4 *3*	<2	2652.06	4^+	1445.65	2^+	E2		E_γ: from table 1 of 2000Sc06. Not shown in figure 2 of 2000Sc06.
1211.6[‡]		2657.2		1445.65	2^+			
1224.0[‡]		3306.9		2082.9				
1225.6[‡]		3399.3		2173.66	3^+			
1236.7 *2*	55 *9*	2173.66	3^+	936.91	1^+	E2		
1255.6[‡]		3142.7		1887.1	(5^+)			
1321.2[‡]		3142.7		1821.61	$(3)^+$			
1426.3[‡]		4078.4		2652.06	4^+			
1445.7 *2*	10.4 *3*	1445.65	2^+	0	0^+	E2		
1473.5[‡]		2919.2	(3)	1445.65	2^+			
1614.1 *2*		1614.09	1^+	0	0^+	M1		
1649.0[‡]		3094.7		1445.65	2^+			
1663.5[‡]		3109.2		1445.65	2^+			
1689.9 *2*		1887.1	(5^+)	197.1	$(7)^+$	E2		
1709.9[‡]		3155.6		1445.65	2^+			
1720.8[‡]		3166.5		1445.65	2^+			
1952.2 *3*		2149.4	5^+	197.1	$(7)^+$			
2058.3[‡]		3504.0		1445.65	2^+			
2157.7[‡]		3094.7		936.91	1^+			
2172.2[‡]		3109.2		936.91	1^+			

[†] From polarization measurement.
[‡] From fig. 2 in 2000Sc06.
[#] Placement of transition in the level scheme is uncertain.

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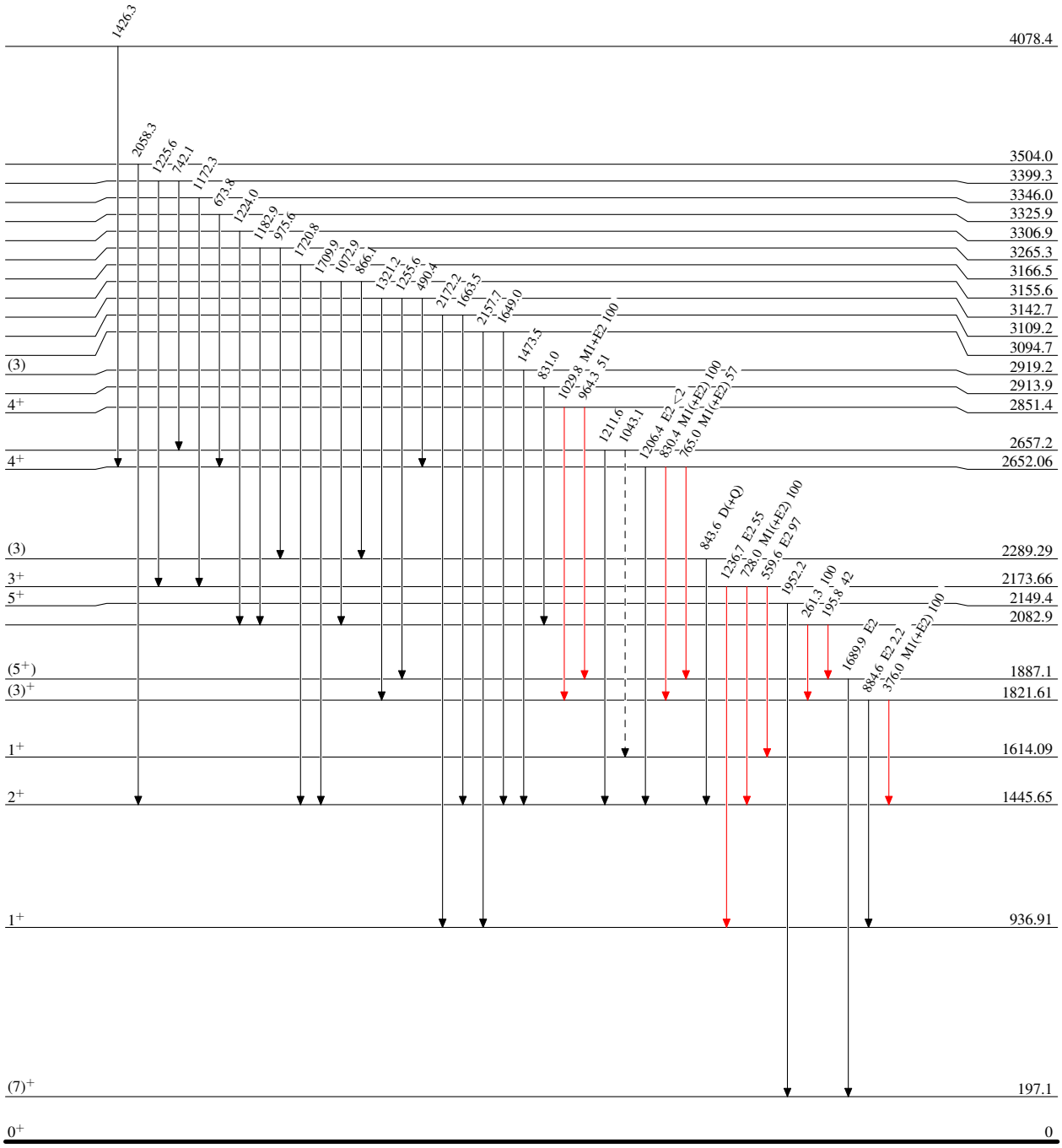
Level Scheme

Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



$^{54}_{27}Co_{27}$

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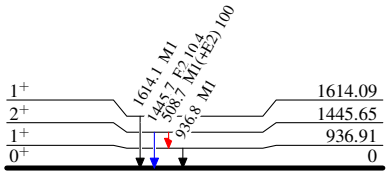
Level Scheme (continued)

Intensities: Relative I_γ



$^{54}_{27}Co_{27}$

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$