

$^{57}\text{Fe}(\text{p},\text{n}\gamma) \text{E}=4.93\text{-}6.205 \text{ MeV}$ **1973Pi07**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. R. Bhat	NDS 85, 415 (1998)	24-Sep-1998

Target $J^\pi=1/2^-$.

1973Pi07: neutron detection: liquid scintillator, TOF. γ spectra and $\text{n}\gamma$ coincidence studies with Ge(Li) detector. J^π derived from Hauser-Feshbach (h-f) analysis are given in comments.

1988Wa07: measured $\sigma(\theta)$ to deduce location and strength of Gamow-Teller resonances.

 ^{57}Co Levels

E(level)	J^π^\dagger	Comments
0.0	$7/2^-$	
1224 3	$9/2^-$	
1377 3	$3/2^-$	
1504 3	$1/2^-$	
1689.8	$11/2^-$	
1757 3	$3/2^-$	
1898 3	$7/2^-$	
1920 3	$5/2^-$	
2133 3	$5/2^-$	
2311 3	$7/2^-$	
2486 3	$9/2^-$	$J^\pi: 11/2^-$.
2523? 3	$(13/2)^-$	$J^\pi: \geq 13/2$.
2555 3	$(7/2^-, 9/2, 11/2^-)$	$J^\pi: \geq 11/2^-$.
2612 3	$7/2^-$	$J^\pi: 7/2^-$.
2722 3		
2731 3	$3/2^-, 5/2$	
2744 3	$(9/2, 11/2, 13/2)$	
2805 3	$(3/2^-, 5/2)$	
2879 3	$3/2^-$	
2979 3	$1/2^+$	
3107 3	$(3/2)^-$	
3121 3		
3165 3		
3177 3	$5/2^-, 7/2^-$	
3186 3	$3/2^+, 5/2^+$	
3247 3		
3265 3	$(3/2^-, 5/2, 7/2^-)$	
3357 10	$3/2^-$	
3461 10	$(3/2^-, 5/2, 7/2^-)$	
3520 10		
3540? 10		
3554 10	$3/2^+, 5/2^+$	
3665 10		
3673 10	$5/2^-, 7/2^-$	
3757 10		
3855 10	$3/2^+, 5/2^+$	
3990 10	$5/2$	
4038 10		
4237 10		

† From Adopted Levels.

$^{57}\text{Fe}(\text{p},\text{n}\gamma) \text{E}=4.93\text{-}6.205 \text{ MeV}$ **1973Pi07 (continued)** $\gamma(^{57}\text{Co})$

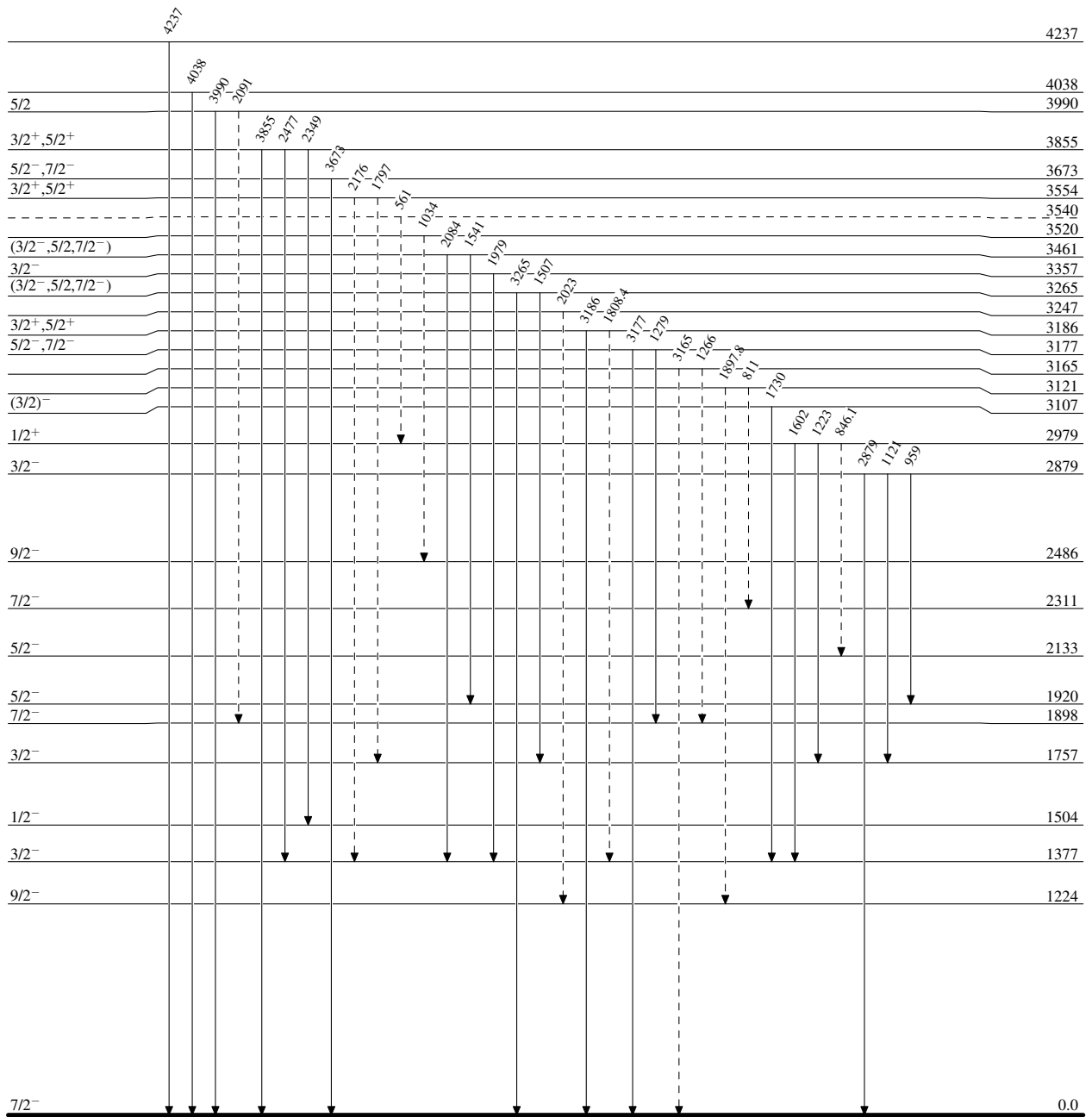
E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
380.4	1757	3/2 ⁻	1377	3/2 ⁻	1730	3107	(3/2 ⁻)	1377	3/2 ⁻
466.3	1689.8	11/2 ⁻	1224	9/2 ⁻	1757.4	1757	3/2 ⁻	0.0	7/2 ⁻
561 [†]	3540?		2979	1/2 ⁺	1797 [†]	3554	3/2 ⁺ , 5/2 ⁺	1757	3/2 ⁻
630	2133	5/2 ⁻	1504	1/2 ⁻	1808.4 [†]	3186	3/2 ⁺ , 5/2 ⁺	1377	3/2 ⁻
673.5	1898	7/2 ⁻	1224	9/2 ⁻	1897.8	1898	7/2 ⁻	0.0	7/2 ⁻
692.2 [†]	2612	7/2 ⁻	1920	5/2 ⁻	1897.8 [†]	3121		1224	9/2 ⁻
755.7	2133	5/2 ⁻	1377	3/2 ⁻	1919.7	1920	5/2 ⁻	0.0	7/2 ⁻
796	2486	9/2 ⁻	1689.8	11/2 ⁻	1979	3357	3/2 ⁻	1377	3/2 ⁻
811 [†]	3121		2311	7/2 ⁻	2023 [†]	3247		1224	9/2 ⁻
833 [†]	2523?	(13/2 ⁻)	1689.8	11/2 ⁻	2084	3461	(3/2 ⁻ , 5/2, 7/2 ⁻)	1377	3/2 ⁻
846.1 [†]	2979	1/2 ⁺	2133	5/2 ⁻	2091 [†]	3990	5/2	1898	7/2 ⁻
866	2555	(7/2 ⁻ , 9/2, 11/2 ⁻)	1689.8	11/2 ⁻	2133	2133	5/2 ⁻	0.0	7/2 ⁻
907.1	2805	(3/2 ⁻ , 5/2)	1898	7/2 ⁻	2176 [†]	3554	3/2 ⁺ , 5/2 ⁺	1377	3/2 ⁻
934.4	2311	7/2 ⁻	1377	3/2 ⁻	2311	2311	7/2 ⁻	0.0	7/2 ⁻
959	2879	3/2 ⁻	1920	5/2 ⁻	2349	3855	3/2 ⁺ , 5/2 ⁺	1504	1/2 ⁻
1034 [†]	3520		2486	9/2 ⁻	2477	3855	3/2 ⁺ , 5/2 ⁺	1377	3/2 ⁻
1046.9	2805	(3/2 ⁻ , 5/2)	1757	3/2 ⁻	2486	2486	9/2 ⁻	0.0	7/2 ⁻
1054.3	2744	(9/2, 11/2, 13/2)	1689.8	11/2 ⁻	2555	2555	(7/2 ⁻ , 9/2, 11/2 ⁻)	0.0	7/2 ⁻
1087.6	2311	7/2 ⁻	1224	9/2 ⁻	2612	2612	7/2 ⁻	0.0	7/2 ⁻
1121	2879	3/2 ⁻	1757	3/2 ⁻	2731	2731	3/2 ⁻ , 5/2	0.0	7/2 ⁻
1223	2979	1/2 ⁺	1757	3/2 ⁻	2805	2805	(3/2 ⁻ , 5/2)	0.0	7/2 ⁻
1223.6	1224	9/2 ⁻	0.0	7/2 ⁻	2879	2879	3/2 ⁻	0.0	7/2 ⁻
1261	2486	9/2 ⁻	1224	9/2 ⁻	3165 [†]	3165		0.0	7/2 ⁻
1266 [†]	3165		1898	7/2 ⁻	3177	3177	5/2 ⁻ , 7/2 ⁻	0.0	7/2 ⁻
1279	3177	5/2 ⁻ , 7/2 ⁻	1898	7/2 ⁻	3186	3186	3/2 ⁺ , 5/2 ⁺	0.0	7/2 ⁻
1377.3	1377	3/2 ⁻	0.0	7/2 ⁻	3265	3265	(3/2 ⁻ , 5/2, 7/2 ⁻)	0.0	7/2 ⁻
1498.6	2722		1224	9/2 ⁻	3673	3673	5/2 ⁻ , 7/2 ⁻	0.0	7/2 ⁻
1507	3265	(3/2 ⁻ , 5/2, 7/2 ⁻)	1757	3/2 ⁻	3855	3855	3/2 ⁺ , 5/2 ⁺	0.0	7/2 ⁻
1541	3461	(3/2 ⁻ , 5/2, 7/2 ⁻)	1920	5/2 ⁻	3990	3990	5/2	0.0	7/2 ⁻
1602	2979	1/2 ⁺	1377	3/2 ⁻	4038	4038		0.0	7/2 ⁻
1689.8	1689.8	11/2 ⁻	0.0	7/2 ⁻	4237	4237		0.0	7/2 ⁻

[†] Placement of transition in the level scheme is uncertain.

$^{57}\text{Fe}(p,\gamma) E=4.93-6.205 \text{ MeV}$ 1973Pi07

Legend

Level Scheme

-----▶ γ Decay (Uncertain) $^{57}_{27}\text{Co}_{30}$

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Legend

Level Scheme (continued)

-----► γ Decay (Uncertain)