

$^{54}\text{Fe}(\text{n},\text{p}\gamma)$ 1972Di07

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

E=4.85, 6.45 MeV, monoenergetic and pulsed neutrons. Ge(Li).

 ^{54}Mn Levels

E(level) [†]	J ^π [‡]	Comments
0	3 ⁺	
54.7 7	2 ⁺	
156.3 4	4 ⁺	
367.6 5	5 ⁺	
407.4 4	3 ⁺	
839.0 5	4 ⁺	
1011.4 7	3 ⁺	
1370.8 8	2 ⁺ ,3 ⁺	E(level): doublet with 1374 level.
1373.8 8	2 ⁺ ,3 ⁺	E(level): doublet with 1371 level.
1453.7 2I	1 ⁺	
1508.4 1I	2 ⁺	
1542 3	2 ⁺ ,3 ⁺	

[†] From least-squares fits of E γ 's.

[‡] From Adopted Levels.

 $\gamma(^{54}\text{Mn})$

E γ	I γ [†]	E _i (level)	J _i ^π	E _f	J _f ^π	Comments
156.2 5		156.3	4 ⁺	0	3 ⁺	
211.4 5		367.6	5 ⁺	156.3	4 ⁺	
251.3 5	65	407.4	3 ⁺	156.3	4 ⁺	
352		407.4	3 ⁺	54.7	2 ⁺	Observed this peak, but partly due to deexcitation of the third excited state in ^{57}Fe .
407.5 5	35	407.4	3 ⁺	0	3 ⁺	
471.4 5	45	839.0	4 ⁺	367.6	5 ⁺	
839.0 6	55	839.0	4 ⁺	0	3 ⁺	
854.3 10	40	1011.4	3 ⁺	156.3	4 ⁺	
956.9 4	60	1011.4	3 ⁺	54.7	2 ⁺	
1316 1		1370.8	2 ⁺ ,3 ⁺	54.7	2 ⁺	
1319 1		1373.8	2 ⁺ ,3 ⁺	54.7	2 ⁺	
1371 1		1370.8	2 ⁺ ,3 ⁺	0	3 ⁺	
1374 1		1373.8	2 ⁺ ,3 ⁺	0	3 ⁺	
1399 2		1453.7	1 ⁺	54.7	2 ⁺	
1454		1508.4	2 ⁺	54.7	2 ⁺	Peak probably due to more than one transition.
1506 3		1508.4	2 ⁺	0	3 ⁺	
1542 3		1542	2 ⁺ ,3 ⁺	0	3 ⁺	

[†] Photon branching (in percent) from I γ obtained at the two intermediate bombarding energies. See 1972Di07 for I γ at E(n)=4.85 MeV, $\theta=125^\circ$ and E(n)=6.45 MeV, $\theta=125^\circ$.

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Level Scheme

Intensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- $I_\gamma > 10\% \times I_\gamma^{\text{max}}$

