^{54}Co ε decay (193.28 ms) 1994Ha43,1977Al11,1992ShZM

History

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

Parent: ^{54}Co: E=0.0; $J^\pi=0^+$; $T_{1/2}$=193.28 ms *7*; Q(ε)=8244.55 *9*; %ε+%β^+ decay=100.0

Additional information 1.

1977Vo02: tof, Q3D, measured Q(β^-)value for (^{3}He,t), deduced ft.

1977Al11: ^{54}Fe(p,n) E=10 MeV, measured $T_{1/2}$ by multiscaling β rays detected in a plastic scintillator.

1992ShZM: ^{54}Fe(p,n), the intense sources efficiently transferred by He-jet system, the γ-rays observed with HPGE, β^+ rays detected in two plastic scintillators. Measured $\gamma\beta$.

1994Ha43: clear evidence for a nonanalog decay branch to the 0^+ state at 2561 keV, isospin-mixing correction is (0.035 *5*)%.

Q(ε)-value differences between superallowed β emitters: ^{42}Sc and ^{54}Co, ^{50}Mn and ^{54}Co, see 1987Ko34, 1990Ha13.

^{54}Fe Levels

E(level)	J^π	$T_{1/2}$
0.0	0^+	stable
1408	2^+	
2561	0^+	

ε,β^+ radiations

E(decay)	E(level)	Iβ^+ †	Iε†	Log *ft*	I($\varepsilon+\beta^+$)†	Comments
(5683.55 *9*)	2561	0.0045	1.8×10^{-5}	6.9	0.004518	av Eβ=2148.74; εK=0.003471; εL=0.0003679; εM+=6.424×10^{-5}
(8244.55 *9*)	0.0	99.8932 *23*	0.1068 *11*	3.48460 *17*	100	av Eβ=3403.27; εK=0.0009501; εL=0.0001006; εM+=1.757×10^{-5}

† Absolute intensity per 100 decays.

$\gamma(^{54}Fe)$

E_γ	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Comments
1153	4.5×10^{-3} *6*	2561	0^+	1408	2^+	E_γ,I_γ: from 1994Ha43. I_γ: for intensity per 100 decays.

† Absolute intensity per 100 decays.

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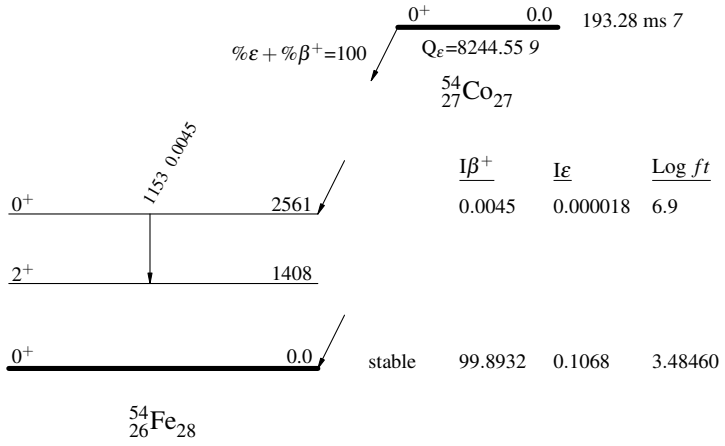
Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



	Iβ+	Iε	Log *ft*
0.0045	0.0045	0.000018	6.9
99.8932	99.8932	0.1068	3.48460