^{54}Co ε decay (1.48 min) 1976NoZX,1971Sa07,1970No04

History

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

Parent: ^{54}Co: E=197.1 *4*; $J^\pi=(7)^+$; $T_{1/2}$=1.48 min *2*; Q(ε)=8244.55 *9*; %ε+%β^+ decay=100.0

Additional information 1.

Produced in ^{54}Fe(d,2n) E=19 MeV (1967We01); ^{40}Ca(^{16}O,pn) E=36 and 38 MeV (1976NoZX); ^{54}Fe(p,n) E=15.5 MeV (1971Sa07,1970Co32).

1971Sa07, 1970No04, 1970Co32: $\beta\gamma$(t), Ge(Li), measured $T_{1/2}$ and B(E2) of 6^+ state.

1967We01: $\gamma\gamma$, $\gamma\gamma(\theta)$, measured t, Iγ, Ge(Li), NaI.

No decay observed to the 6382 or 6528 levels of ^{54}Fe (1976NoZX).

^{54}Fe Levels

E(level)	J^π †	$T_{1/2}$	Comments
0.0	0^+	stable	
1407 *1*	2^+		
2537 *2*	4^+		
2948 *3*	6^+	1.20 ns *3*	$T_{1/2}$: weighted average from 1.19 ns *3* (1970Co32) and 1.24 ns *4* (1971Sa07).

† From Adopted Levels.

ε,β^+ radiations

E(decay)	E(level)	Iβ^+ †	Iε†	Log *ft*	I($\varepsilon+\beta^+$)†	Comments
(5494 *3*)	2948	99.558 *5*	0.442 *5*	5.177 *6*	100	av Eβ=2056.3 *24*; εK=0.0039 Additional information 2.

† Absolute intensity per 100 decays.

$\gamma(^{54}Fe)$

Eγ	Iγ‡#	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.†	α@	I$_{(\gamma+ce)}$#	Comments
411 *1*	97 *7*	2948	6^+	2537	4^+	(E2)	0.00258	5	α(K)=0.00233 *4*; α(L)=0.000226 *4* Additional information 3.
1130 *1*	98 *5*	2537	4^+	1407	2^+	(E2)			
1407 *1*	100 *5*	1407	2^+	0.0	0^+	(E2)			

† From $\gamma\gamma(\theta)$ and J^π of level scheme.

‡ From 1967We01.

Absolute intensity per 100 decays.

@ Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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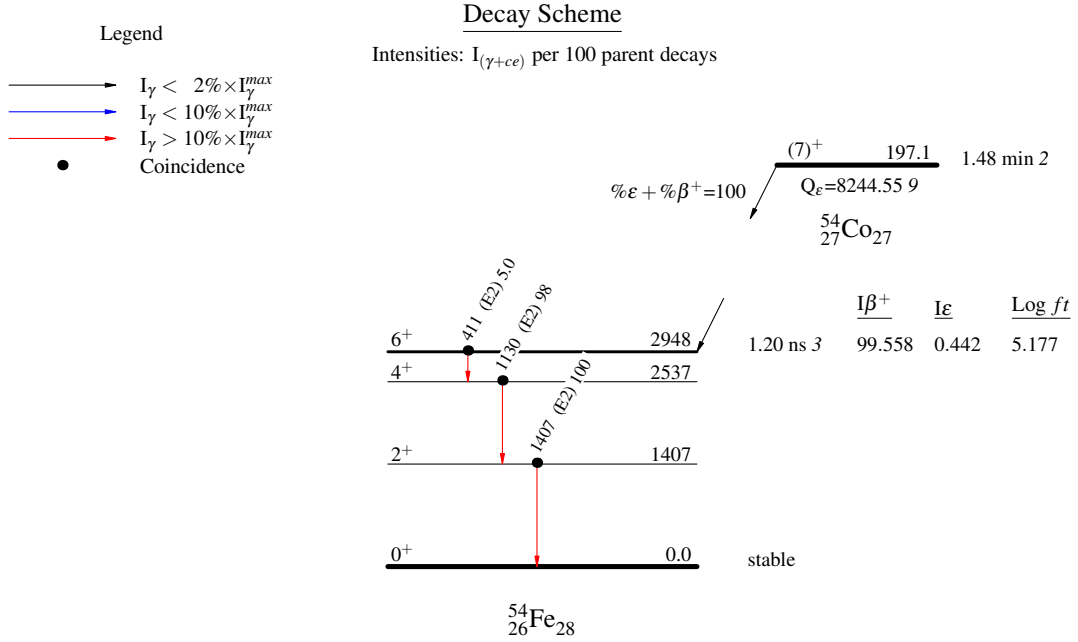
Decay Scheme

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



	Iβ+	Iε	Log ft
1.20 ns 3	99.558	0.442	5.177