^{51}Fe ε decay 1989Ho13,1984Ay01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Wang Jimin and Huang Xiaolong	NDS 144, 1 (2017)	1-Mar-2016

Parent: ^{51}Fe: E=0.0; $J^\pi=5/2^-$; $T_{1/2}$=305 ms *2*; Q(ε)=8041 *9*; %ε+%$β^+$ decay=100.0
Others: 1984Ay01.
1989Ho13: measured $T_{1/2}$, Iβ, and Eγ. Shell-model calculation.
1984Ay01: measured $T_{1/2}$, Iβ.
1976HoZE: measured $T_{1/2}$, Iβ.
^{51}Fe source produced generally by ^{50}Cr(^{3}He,2n).

^{51}Mn Levels

E(level)†	J^π‡	$T_{1/2}$‡
0.0	$5/2^-$	46.2 min *1*
237	$7/2^-$	
1825	$3/2^-$	
2140	$3/2^-$	
2914	$3/2^-$	
3426	($1/2^-$ to $7/2^-$)	
3555	$3/2^-$	

† From 1989Ho13.
‡ From Adopted Levels.

ε,$β^+$ radiations

E(decay)	E(level)	Iβ+ ‡	Iε‡	Log *ft*	I(ε+β+)†‡	Comments
(4486 *9*)	3555	0.16 *5*	0.0013 *4*	5.00 *14*	0.16 *5*	av Eβ=1559.9 *72*; εK=0.00736 *10*; εL=0.000773 *10*; εM+=0.0001347 *1*
(4615 *9*)	3426	0.20 *6*	0.0015 *4*	4.97 *13*	0.20 *6*	av Eβ=1621.9 *72*; εK=0.00660 *9*; εL=0.000693 *9*; εM+=0.0001208 *1*
(5127 *9*)	2914	0.10 *3*	0.00050 *15*	5.54 *13*	0.10 *3*	av Eβ=1868.7 *73*; εK=0.00444 *5*; εL=0.000466 *6*; εM+=8.12×10^{-5} *9*
(5901 *9*)	2140	0.24 *7*	0.00072 *21*	5.51 *13*	0.24 *7*	av Eβ=2244.4 *73*; εK=0.002655 *25*; εL=0.000278 *3*; εM+=4.85×10^{-5} *5*
(6216 *9*)	1825	0.49 *14*	0.0012 *3*	5.32 *13*	0.49 *14*	av Eβ=2397.9 *74*; εK=0.002204 *19*; εL=0.0002311 *2*; εM+=4.03×10^{-5} *4*
(7804 *9*)	237	5.0 *13*	0.0056 *15*	4.86 *12*	5.0 *13*	av Eβ=3176.4 *74*; εK=0.000998 *7*; εL=0.0001046 *7*; εM+=1.823×10^{-5} *12* I(ε+β+): 5.0 *13* (1984Ay01).
(8041 *9*)	0.0	93.7 *13*	0.0949 *17*	3.653 *11*	93.8 *13*	av Eβ=3293.1 *74*; εK=0.000901 *6*; εL=9.45×10^{-5} *6*; εM+=1.646×10^{-5} *11*

† I(ε+$β^+$) from 1989Ho13. Authors data are normalized to Iβ(237)=5.0% *13* from 1984Ay01.
‡ Absolute intensity per 100 decays.

^{51}Fe ε decay 1989Ho13,1984Ay01 (continued)

γ(^{51}Mn)

Iγ normalization: From %Iγ(237γ)=5.0 *13* (1984Ay01).

E_γ	I_γ[†#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ[‡]
237	100 *26*	237	7/2⁻	0.0	5/2⁻	M1+E2	+0.100 *11*
1825	9.8 *28*	1825	3/2⁻	0.0	5/2⁻	M1	
2140	4.8 *14*	2140	3/2⁻	0.0	5/2⁻	M1+E2	−0.08 *7*
2914	2.0 *6*	2914	3/2⁻	0.0	5/2⁻	M1	
3426	4.0 *12*	3426	(1/2⁻ to 7/2⁻)	0.0	5/2⁻		
3555	3.2 *10*	3555	3/2⁻	0.0	5/2⁻		

† Relative intensity renormalized to Iγ(237γ)=100 *26*. Values from Iβ and authors′ decay scheme (Iγ not given by 1989Ho13).
‡ From adopted γ radiations.
# For absolute intensity per 100 decays, multiply by 0.050.

^{51}Fe ε decay 1989Ho13,1984Ay01

Decay Scheme

Intensities: I_γ per 100 parent decays