^{60}Mn β^- decay (0.28 s) 2006Li15

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 114, 1849 (2013)	31-Dec-2012

Parent: ^{60}Mn: E=0.0; $J^\pi=1^+$; $T_{1/2}$=0.28 s *2*; Q(β^-)=8444 *4*; %β^- decay=100.0

Additional information 1.

2006Li15 produced the ^{60}Cr source from projectile fragmentation of ^{86}Kr at E=140 MeV/A incident on Be and mass separation. Fully-stripped ^{60}Cr fragments were implanted in double-sided Si microstrip detector which was part of beta counting system. Measured fragment-$\beta\gamma$, $\beta\gamma$(t).

1988Bo06: ^{60}Mn from W(^{76}Ge,X), E=11.5 MeV/nucleon, mass separation, measured Eγ, Iγ, $\beta\gamma$, $\gamma\gamma$, $T_{1/2}$. 1988Bo06 did not observe decay in $\beta^-\gamma$ coin, which implied a 100% β^- branch to ^{60}Fe g.s.

^{60}Fe Levels

E(level)	J^π	$T_{1/2}$	Comments
0.0	0^+	2.62×10^6 y *4*	$T_{1/2}$: From Adopted Levels, Gammas.
823	2^+		
1974	0^+		
2356	0^+		

β^- radiations

E(decay)	E(level)	Iβ^- †	Log *ft*	Comments
(6088 *4*)	2356	3.0 *5*	5.3	av Eβ=2787.5 *20*
(6470 *4*)	1974	5.0 *6*	5.2	av Eβ=2974.1 *20*
(7621 *4*)	823	4.2 *12*	5.6	av Eβ=3536.5 *20*
(8444 *4*)	0.0	88 *2*	4.5	av Eβ=3938.9 *20*

† Absolute intensity per 100 decays.

γ(^{60}Fe)

Eγ	Iγ †	E$_i$(level)	J_i^π	E$_f$	J_f^π	I$_{(\gamma+ce)}$ †
823.4	12.2 *8*	823	2^+	0.0	0^+	12.2 *8*
1150.2	5.0 *6*	1974	0^+	823	2^+	5.0 *6*
1532.4	3.0 *5*	2356	0^+	823	2^+	3.0 *5*

† Absolute intensity per 100 decays.

^{60}Mn β^- decay (0.28 s) 2006Li15

Decay Scheme

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