^{52}Sc β^- decay 1985Hu03,2009Zh23

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yang Dong, Huo Junde	NDS 128, 185 (2015)	10-Jul-2015

Parent: ^{52}Sc: E=0.0; $J^\pi=3^{(+)}$; $T_{1/2}$=8.2 s *2*; Q(β^-)=9.30×10^3 *14*; %β^- decay=100.0

1985Hu03: Sources: produced by the fragmentation of a U target with 600 MeV proton beam, on-line mass separation, measured Eγ, Iγ, $\beta\gamma$-coin, Ge(Li).

2009Zh23: ^{52}Sc produced in ^{9}Be(^{48}Ca,X) E=172 MeV, separated using the Fragment Mass Analyzer. γ's were detected using the Gammasphere array, consisting of 101 Compton-suppressed HPGe detectors. Measured Eγ, (fragment)γ coin.

All data are from 1985Hu03, except as noted.

^{52}Ti Levels

E(level)†	J^π‡	$T_{1/2}$‡	E(level)†	J^π‡	E(level)†	J^π‡
0.0	0^+	1.7 min *1*	3349.9 *3*	4^+	4286.1 *10*	
1049.72 *10*	2^+		3452.7 *3*	3^-	4477.9 *4*	
2264.2 *3*	2^+		3590	2^+	4647	4^+
2317.64 *14*	4^+		3922.2 *4*	2^+	4785.9 *4*	(2^+)
2431.58 *22*	2^+		4022.3 *4*	(4^+)	5319	
3143.2 *7*	4^+		4077.6 *7*			

† From least-squares fit to Eγ's.

‡ From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-†‡	Log *ft*	Comments
(3.98×10^3 *14*)	5319	1.6 *5*	6.56 *16*	av Eβ=2179 *93*
(4.51×10^3 *14*)	4785.9	9.7 *13*	5.56 *11*	av Eβ=1936 *93*
(4.82×10^3 *14*)	4477.9	8.9 *12*	5.73 *11*	av Eβ=2086 *93*
(5.01×10^3 *14*)	4286.1	1.6 *5*	6.56 *16*	av Eβ=2179 *93*
(5.22×10^3 *14*)	4077.6	1.8 *6*	6.59 *17*	av Eβ=2281 *93*
(5.28×10^3 *14*)	4022.3	6.5 *10*	6.05 *11*	av Eβ=2308 *93*
(5.38×10^3 *14*)	3922.2	7.6 *11*	6.02 *10*	av Eβ=2357 *93*
(5.85×10^3 *14*)	3452.7	3.0 *12*	6.60 *19*	av Eβ=2586 *93*
4.59×10^3 *16*	3349.9	7.8 *16*	6.22 *12*	av Eβ=2637 *93*
(6.16×10^3 *14*)	3143.2	3.2 *7*	6.68 *12*	av Eβ=2738 *93*
(6.87×10^3 *14*)	2431.58	5.8 *14*	6.65 *12*	av Eβ=3087 *94*
(6.98×10^3 *14*)	2317.64	10.3 *33*	6.43 *15*	av Eβ=3142 *94*
(7.04×10^3 *14*)	2264.2	9.5 *16*	6.48 *10*	av Eβ=3169 *94*
7.04×10^3 *17*	1049.72	24.2 *35*	6.40 *5*	av Eβ=3764 *94*

† Calculated from the γ-intensity balance at each level.

‡ Absolute intensity per 100 decays.

^{52}Sc β^- decay 1985Hu03,2009Zh23 (continued)

$\gamma(^{52}Ti)$

Iγ normalization: calculated by assuming that the intensity of the $\Delta J=3$ β transition to the ground state of ^{52}Ti is negligible and that the sum of the γ-intensity feeding the g.s. is 100%.

E_γ	I_γ‡	E_i(level)	J_i^π	E_f	J_f^π	E_γ	I_γ‡	E_i(level)	J_i^π	E_f	J_f^π
673†		4022.3	(4^+)	3349.9	4^+	1646.0 *6*	1.9 *6*	4077.6		2431.58	2^+
711†		3143.2	4^+	2431.58	2^+	1705†		4022.3	(4^+)	2317.64	4^+
825†		3143.2	4^+	2317.64	4^+	1758.2 *3*	4.1 *7*	4022.3	(4^+)	2264.2	2^+
880†		4022.3	(4^+)	3143.2	4^+	1866†		5319		3452.7	3^-
1025.0 *5*	3.5 *7*	4477.9		3452.7	3^-	1968.4 *9*	1.7 *5*	4286.1		2317.64	4^+
1032.3 *3*	14 *1*	3349.9	4^+	2317.64	4^+	1968.4 *9*	1.7 *5*	5319		3349.9	4^+
1049.7 *1*	100	1049.72	2^+	0.0	0^+	2093.4 *7*	3.3 *6*	3143.2	4^+	1049.72	2^+
1128.1 *3*	5.5 *8*	4477.9		3349.9	4^+	2265.2 *13*	1.6 *4*	2264.2	2^+	0.0	0^+
1135.0 *3*	7 *1*	3452.7	3^-	2317.64	4^+	2328†		4647	4^+	2317.64	4^+
1157†		3590	2^+	2431.58	2^+	2382†		4647	4^+	2264.2	2^+
1214.5 *3*	12 *1*	2264.2	2^+	1049.72	2^+	2468.8 *4*	8 *1*	4785.9	(2^+)	2317.64	4^+
1267.9 *1*	40 *3*	2317.64	4^+	1049.72	2^+	2524†		4785.9	(2^+)	2264.2	2^+
1325†		3590	2^+	2264.2	2^+	2872.0 *5*	3.9 *7*	3922.2	2^+	1049.72	2^+
1334†		4785.9	(2^+)	3452.7	3^-	2972.2 *5*	2.6 *5*	4022.3	(4^+)	1049.72	2^+
1381.9 *2*	11 *1*	2431.58	2^+	1049.72	2^+	3001†		5319		2317.64	4^+
1491.0 *5*	3.0 *6*	3922.2	2^+	2431.58	2^+	3054†		5319		2264.2	2^+
1591†		4022.3	(4^+)	2431.58	2^+	3737.2 *11*	2.1 *5*	4785.9	(2^+)	1049.72	2^+
1645†		4785.9	(2^+)	3143.2	4^+	3923.0 *28*	0.9 *3*	3922.2	2^+	0.0	0^+

† From 2009Zh23.
‡ For absolute intensity per 100 decays, multiply by 0.976 *5*.

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Decay Scheme

Intensities: I(γ+ce) per 100 parent decays