^{52}Ca β^- decay 1985Hu03

History

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

Parent: ^{52}Ca: E=0.0; $J^\pi=0^+$; $T_{1/2}$=4.6 s *3*; Q(β^-)=5.90×10^3 *14*; %β^- decay=100.0

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) and β telescope (0.5 mm scintillator sheet).

^{52}Sc Levels

E(level)	J^π[†]	$T_{1/2}$
0.0	3$^{(+)}$	8.2 s *2*
675.21 *23*		
1636.43 *18*	1$^+$	
2745.7 *7*	1$^+$	
3458.1 *10*		
4265.7 *15*	1$^+$	

[†] Based on Logft values and shell model calculations.

β^- radiations

E(decay)	E(level)	Iβ^-[†‡]	Log *ft*	Comments
(1.63×10^3 *14*)	4265.7	1.4 *4*	5.8 *4*	av Eβ=1588 *253*
(2.44×10^3 *14*)	3458.1	0.6 *3*	6.5 *4*	av Eβ=1980 *254*
(3.15×10^3 *14*)	2745.7	11.2 *12*	5.57 *22*	av Eβ=2327 *255*
4.06×10^3 *20*	1636.43	86.8 *13*	5.07 *18*	av Eβ=2870 *256*
				E(decay): from Fermi-Kurie plot analysis of the data (1985Hu03).
(5.22×10^3 *14*)	675.21	<5	>6.6	av Eβ=3342 *256*

[†] From γ(+ce) intensity balance at each level.
[‡] Absolute intensity per 100 decays.

γ(^{52}Sc)

Iγ normalization: calculated by assuming that the intensity of the β transition to the ground state of ^{52}Sc (ΔJ=3) negligible and that the sum of the transition intensities of γ's feeding the g.s. is 100%.

E$_\gamma$	I$_\gamma$[†‡]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
675.2 *3*	100 *2*	675.21		0.0	3$^{(+)}$
961.2 *3*	80 *2*	1636.43	1$^+$	675.21	
1636.4 *2*	57 *1*	1636.43	1$^+$	0.0	3$^{(+)}$
2070.4 *6*	18 *2*	2745.7	1$^+$	675.21	
3458.0 *10*	1.0 *5*	3458.1		0.0	3$^{(+)}$
4265.5 *15*	2.2 *3*	4265.7	1$^+$	0.0	3$^{(+)}$

[†] Photon intensity relative to Iγ=100 for the strongest transition. Uncertainties deduced from authors' quoted uncertainties on Iβ's.
[‡] For absolute intensity per 100 decays, multiply by 0.624 *9*.

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Decay Scheme

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