^{124}Sn(d,pγ) 1976Ma09

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	J. Katakura	NDS 112, 495 (2011)	1-Jan-2010

E=5-10 MeV, enriched target, excitation function; semi γ, $\gamma\gamma$-coin, pγ-coin, semi ce.

The level scheme is that proposed by 1976Ma09. The evaluators added tentatively the 618.0-, 937.2-, and 1060.1-keV levels from energy fit.

^{125}Sn Levels

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[‡]	Comments
0.0	11/2$^-$	9.64 d *3*	
27.50 *14*	3/2$^+$	9.25 min *5*	Additional information 1.
215.06 *20*	1/2$^+$		
618.0 *4*	(9/2$^-$)		
855.0? *8*	7/2$^+$		
930.4 *3*	1/2,3/2		
937.2 *6*	(7/2)$^-$		
1060.1 *7*	7/2$^+$		
1072.5 *7*	1/2,3/2		
1188.0 *8*	1/2$^+$,3/2$^+$,5/2$^+$		
1259.6? *11*	(5/2)$^+$		
1540.3 *9*	(5/2)$^+$		
1756.5? *10*	1/2,3/2		

[†] From a least-squares fit to Eγ's (evaluators).
[‡] From Adopted Levels.

γ(^{125}Sn)

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[@]	α[†#]	Comments
187.6 *2*	100	215.06	1/2$^+$	27.50	3/2$^+$			
618.0 *4*	9.0 *18*	618.0	(9/2$^-$)	0.0	11/2$^-$	(M1,E2)	0.0044 *4*	α=0.0044 *4*; α(K)=0.0038 *3*; α(L)=0.000482 *20*; α(M)=9.4×10^{-5} *4*; α(N+..)=1.92×10^{-5} *9* α(N)=1.77×10^{-5} *8*; α(O)=1.50×10^{-6} *13* Mult.: From α(K)exp=0.0031 *6*.
^{x}633[&] *1*								
715.4[&] *2*		930.4	1/2,3/2	215.06	1/2$^+$			
827.5 *8*	12.7 *13*	855.0?	7/2$^+$	27.50	3/2$^+$	(E2)	0.00199 *3*	α=0.00199 *3*; α(K)=0.001720 *25*; α(L)=0.000216 *3*; α(M)=4.22×10^{-5} *6*; α(N+..)=8.56×10^{-6} *13* α(N)=7.90×10^{-6} *12*; α(O)=6.63×10^{-7} *10* Mult.: From adopted gammas; M1,E2 from α(K)exp=0.0016 *3*.
857.4 *6*	2.4 *2*	1072.5	1/2,3/2	215.06	1/2$^+$			
902.6 *7*	6.5 *6*	930.4	1/2,3/2	27.50	3/2$^+$	[M1,E2]	0.00180 *18*	α=0.00180 *18*; α(K)=0.00156 *16*; α(L)=0.000190 *16*; α(M)=3.7×10^{-5} *3*; α(N+..)=7.6×10^{-6} *7* α(N)=7.0×10^{-6} *6*; α(O)=6.0×10^{-7} *7*
937.2 *6*	7.4 *7*	937.2	(7/2)$^-$	0.0	11/2$^-$	(E2)	0.001488 *21*	α=0.001488 *21*; α(K)=0.001291 *19*; α(L)=0.0001596 *23*; α(M)=3.12×10^{-5} *5*; α(N+..)=6.35×10^{-6}

Continued on next page (footnotes at end of table)

^{124}Sn(d,pγ) 1976Ma09 (continued)

$\gamma(^{125}Sn)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	α[†#]	Comments
								α(N)=5.85×10^{-6} *9*; α(O)=4.96×10^{-7} *7* Mult.: From adopted gammas; M1,E2 from α(K)exp=0.0012 *2*. α(K)(M1)=0.0016, α(K)(E2)=0.0013.
973.3 *10*	3.8 *10*	1188.0	1/2$^+$,3/2$^+$,5/2$^+$	215.06	1/2$^+$	M1,E2	0.00151 *15*	α=0.00151 *15*; α(K)=0.00132 *14*; α(L)=0.000159 *14*; α(M)=3.1×10^{-5} *3*; α(N+..)=6.4×10^{-6} *6* α(N)=5.9×10^{-6} *5*; α(O)=5.1×10^{-7} *6* Mult.: From α(K)exp=0.0018 *4*. α(K)(M1)=0.00146, α(K)(E2)=0.00118.
1032.6 *7*	4.3[‡] *4*	1060.1	7/2$^+$	27.50	3/2$^+$			
1045.0[a] *9*	2.8 *2*	1072.5	1/2,3/2	27.50	3/2$^+$			
1160.1 *10*	4.0[‡] *4*	1188.0	1/2$^+$,3/2$^+$,5/2$^+$	27.50	3/2$^+$	M1,E2	0.00103 *10*	α=0.00103 *10*; α(K)=0.00090 *9*; α(L)=0.000107 *9*; α(M)=2.09×10^{-5} *18*; α(N+..)=7.07×10^{-6} *21* α(N)=3.9×10^{-6} *4*; α(O)=3.4×10^{-7} *4*; α(IPF)=2.78×10^{-6} *21* Mult.: From α(K)exp=0.0011 *2*. α(K)(M1)=0.00099, α(K)(E2)=0.00081.
1232.1 *11*	4.9 *7*	1259.6?	(5/2)$^+$	27.50	3/2$^+$	M1,E2	0.00091 *8*	α=0.00091 *8*; α(K)=0.00079 *8*; α(L)=9.4×10^{-5} *8*; α(M)=1.84×10^{-5} *16*; α(N+..)=1.44×10^{-5} *5* α(N)=3.5×10^{-6} *3*; α(O)=3.0×10^{-7} *3*; α(IPF)=1.07×10^{-5} *7* Mult.: From α(K)exp=0.0007 *2*. α(K)(M1)=0.00086, α(K)(E2)=0.00071.
1512.8 *9*	6.4[‡] *6*	1540.3	(5/2)$^+$	27.50	3/2$^+$			
1729[&a] *1*		1756.5?	1/2,3/2	27.50	3/2$^+$			

† Additional information 2.
‡ The uncertainty in the author's value of 6.37 *6* is probably a typo. The evaluator assigns an uncertainty of 10%, typical of the uncertainties in the other strong transitions.
# α(K)exp if mult(902.6γ)=M1 (1976Ma09).
@ From α(K)exp normalized to α(K)(902.6γ)=0.00173, the M1 theory from 1968Ha53. Mult(902.6γ) has not been determined, but from level scheme, it must be M1 or E2.
& Weak γ ray; no intensity was given (1976Ma09).
a Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

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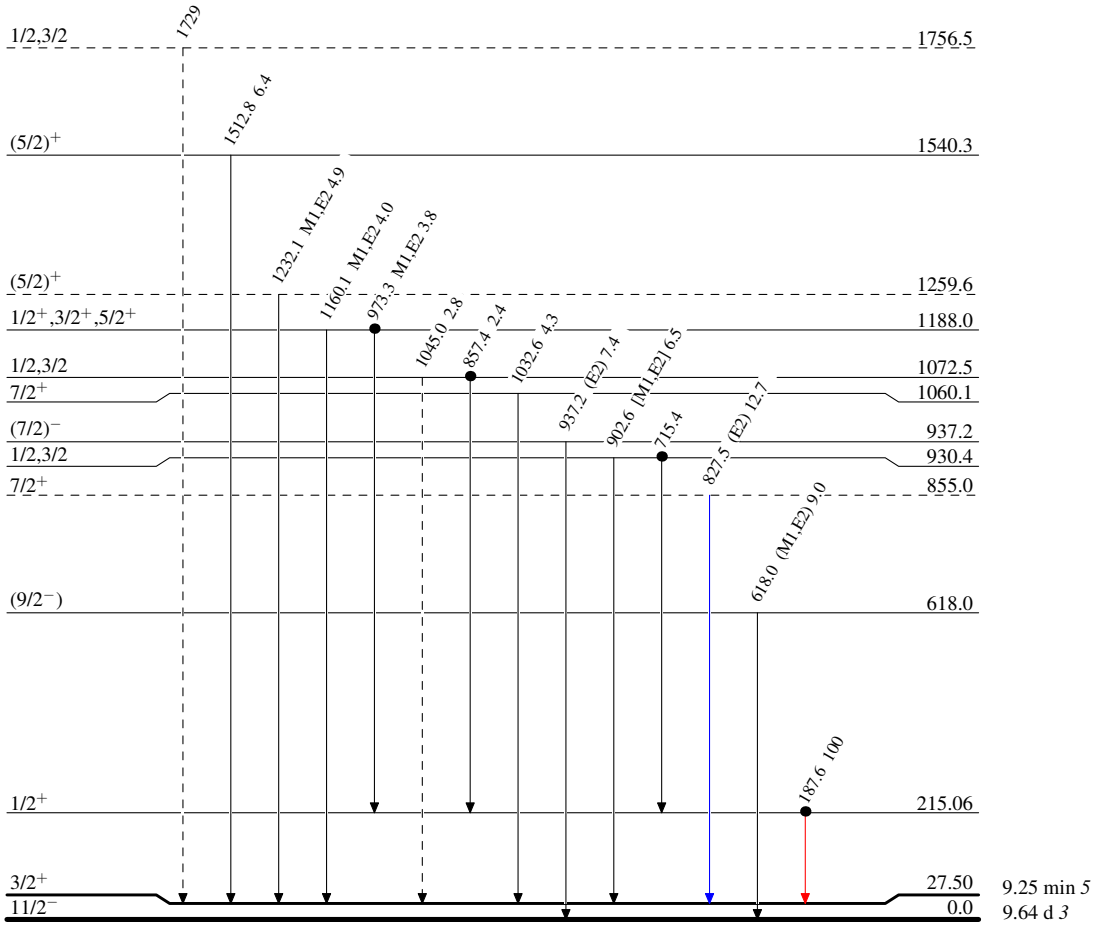
Level Scheme

Intensities: Relative I_γ

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)
- Coincidence



$^{125}_{50}Sn_{75}$