^{130}In β^- decay (0.29 s) 1981Fo02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 93, 33 (2001)	11-May-2001

Parent: ^{130}In: E=0.0; $J^\pi=1^{(-)}$; $T_{1/2}$=0.29 s *2*; Q(β^-)=10249 *38*; %β^- decay=100.0

1981Fo02: measured Eγ, Iγ, ce, $\gamma\gamma$, $\beta\gamma$(t), $T_{1/2}$ (^{130}In).

Others:

1973Ke12 (also 1973Ke26): measured Eγ, Iγ, Eβ, $\beta\gamma$, $T_{1/2}$. Four γ rays were reported and a Q(β^-)=7300 *400*.

1990St13, 1987Sp09, 1985Fo03: measured Eβ, $\beta\gamma$.

1993Ru01, 1986Wa17 (also 1986ReZU,1986ReZS), 1983Sh07, 1981En05, 1980Lu04, 1977Ru09, 1976Lu02: measured $T_{1/2}$(^{130}In), %β^-n.

^{130}Sn Levels

E(level)[†]	J^π[‡]	$T_{1/2}$[#]	Comments
0.0	0^+		
1221.26 *5*	(2^+)		
1946.84 *11*	(7^-)	1.7 min *1*	$T_{1/2}$: from Adopted Levels.
1995.57 *9*	(4^+)		
2028.31 *7*	(2^+)		
2084.80 *9*	(5^-)	52 ns *3*	
2214.60 *9*	(4^-)	<0.5 ns	
3167.16 *9*	$(2^-,3)$		
4119.77 *10*	(2^-)		

[†] From least-squares adjustment to Eγ's.
[‡] From Adopted Levels.
[#] $\beta\gamma$(t) or $\gamma\gamma$(t) (1981Fo02).

β^- radiations

Eβ, Iβ, $\beta\gamma$ measurements: 1985Fo03, 1987Sp09, 1990St13.

E(decay)	E(level)	Iβ^-[†]	Log *ft*	Comments
(6.13×10^3 *4*)	4119.77	89 *11*	4.2 *1*	av Eβ= 2725 *19* E(decay): 6168 *61* (1987Sp09) from (952γ)β coin; 5770 (1990St13), 6122 *25* (1987Sp09), 6060 *180* (1985Fo03) from (1905γ)β coin; 5630 (1990St13) from (2092γ)β coin; 5880 (1990St13) from (1221γ)β coin.
(7.08×10^3[‡] *4*)	3167.16	<1	>6.5	av Eβ= 3176 *19*
(8.22×10^3[‡] *4*)	2028.31	<1	>6.8	av Eβ= 3715 *19*
(9.03×10^3 *4*)	1221.26	<5	>6.3	av Eβ= 4095 *19* E(decay): 8530 (1990St13), 8840 *250* (1985Fo03) from (1221γ)β coin.
(1.025×10^4 *4*)	0.0	<15	>5.9	av Eβ= 4670 *19* Iβ^-: from log *ft*>5.9 (for first-forbidden transition). E(decay): 10030 *500* (1985Fo03) from singles β spectrum.

[†] Absolute intensity per 100 decays.
[‡] Existence of this branch is questionable.

^{130}In β^- decay (0.29 s) 1981Fo02 (continued)

$\gamma(^{130}Sn)$

Iγ normalization: Σ (I(γ+ce) of γ's from 4120)≈99. %β^-n=0.93 *13*.

E_γ	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[@]	Comments
89.23 *3*	51 *5*	2084.80	(5$^-$)	1995.57	(4$^+$)	E1	0.251	α(K)= 0.2171; α(L)= 0.0276; α(M)=0.00534; α(N+..)=0.00115 α(K)exp=0.23 *7*
129.80 *5*	82 *5*	2214.60	(4$^-$)	2084.80	(5$^-$)	M1	0.273	α(K)= 0.2359; α(L)= 0.0299; α(M)=0.00584; α(N+..)=0.00132 α(K)exp=0.19 *4*
137.96 *5*	25.6 *20*	2084.80	(5$^-$)	1946.84	(7$^-$)	E2	0.514	α(K)= 0.401; α(L)= 0.0912; α(M)=0.01828; α(N+..)=0.00386 α(K)exp=0.37 *8*
219.08 *10*	2.9 *3*	2214.60	(4$^-$)	1995.57	(4$^+$)			
774.37 *10*	68 *4*	1995.57	(4$^+$)	1221.26	(2$^+$)			
807.01 *10*	2.2 *2*	2028.31	(2$^+$)	1221.26	(2$^+$)			
952.59[&] *10*	≈6.4[&†]	3167.16	(2$^-$,3)	2214.60	(4$^-$)			
952.59[&] *10*	≈14.9[&†]	4119.77	(2$^-$)	3167.16	(2$^-$,3)			
1221.24 *5*	81 *4*	1221.26	(2$^+$)	0.0	0$^+$			
1905.17 *10*	100 *5*	4119.77	(2$^-$)	2214.60	(4$^-$)			
1945.82 *10*	8.3 *7*	3167.16	(2$^-$,3)	1221.26	(2$^+$)			
2028.34 *10*	4.7 *4*	2028.31	(2$^+$)	0.0	0$^+$			
2091.45 *15*	6.9 *7*	4119.77	(2$^-$)	2028.31	(2$^+$)			
2898.5 *3*	3.2 *4*	4119.77	(2$^-$)	1221.26	(2$^+$)			

† From $\gamma\gamma$. Total Iγ(952.59)=21.3 *10*.
‡ From α(K)exp.
# For absolute intensity per 100 decays, multiply by ≈0.79.
@ Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
& Multiply placed with intensity suitably divided.

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
@ Multiply placed: intensity suitably divided