^{128}In β^- decay (0.84 s) 1979Fo10

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Zoltan Elekes and Janos Timar	NDS 129, 191 (2015)	28-Feb-2015

Parent: ^{128}In: E=0.0; $J^\pi=(3)^+$; $T_{1/2}$=0.84 s *6*; Q(β^-)=922×10[1] *15*; %β^- decay=100.0

1979Fo10: ^{235}U(n,F) E=th, on-line mass separation; Ge detector, $\gamma\gamma$; scintillator-scintillator $\beta\gamma$.

1986Go10: ^{235}U(n,F) E=th, on-line mass separation; γ, B.

The decay scheme of ^{128}In is that proposed by 1979Fo10. The levels connected with γ-transitions to g.s. and lowest-2^+ level, and transitions coincident with them, were assigned to this decay (see also 0.72 s decay). No β^- transition to the 4^+ level at 2000.35 keV was assumed.

Iβ: calculated by evaluators from γ intensities and their uncertainties given in 1979Fo10.

^{128}Sn Levels

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	Comments
0.0	0^+	59.07 min *14*	$T_{1/2}$: from Adopted Levels.
1168.82 *4*	$(2)^+$		J$^\pi$: log *ft*=5.92 of this dataset suggests $(2,3,4)^+$.
2104.07 *5*	$(2)^+$		J$^\pi$: log *ft*=5.81 of this dataset suggests $(2,3,4)^+$.
2258.36 *6*	$(2)^+$		J$^\pi$: log *ft*=6.31 of this dataset suggests (2,3,4).
2274.06 *10*	$(2^-,3,4^+)$		J$^\pi$: log *ft*=6.81 of this dataset suggests (2,3,4).
2578.62 *8*	$(2)^+$		J$^\pi$: log *ft*=6.40 of this dataset suggests (2,3,4).
2633.09 *9*	$(2^-,3,4^+)$		J$^\pi$: log *ft*=6.43 of this dataset suggests (2,3,4).
2642.27 *6*	$(2^-,3,4^+)$		J$^\pi$: log *ft*=6.47 of this dataset suggests (2,3,4).
2756.54 *9*	$(2^-,3,4^+)$		J$^\pi$: log *ft*=6.91 of this dataset suggests (2,3,4).
2952.46 *9*	$(2^-,3,4^+)$		J$^\pi$: log *ft*=6.54 of this dataset suggests (2,3,4).
3091.97 *8*	$(2^-,3,4^+)$		J$^\pi$: log *ft*=6.43 of this dataset suggests (2,3,4).
3225.6 *3*	$(2)^+$		J$^\pi$: log *ft*=6.48 of this dataset suggests (2,3,4).
3519.86 *9*	$(2)^+$		J$^\pi$: log *ft*=5.21 of this dataset suggests $(2,3,4)^+$.
3886.39 *13*	$(2)^+$		J$^\pi$: log *ft*=5.76 of this dataset suggests $(2,3,4)^+$.
3954.85 *9*	$(2)^+$		J$^\pi$: log *ft*=5.55 of this dataset suggests $(2,3,4)^+$.
3997.61 *9*	$(3,4)^+$		J$^\pi$: log *ft*=5.75 of this dataset suggests $(2,3,4)^+$.
4038.01 *13*	$(2)^+$		J$^\pi$: log *ft*=5.93 of this dataset suggests $(2,3,4)^+$.
4075.03 *10*	$(3,4)^+$		J$^\pi$: log *ft*=5.79 of this dataset suggests $(2,3,4)^+$.
4219.87 *9*	$(3,4)^+$		J$^\pi$: log *ft*=5.71 of this dataset suggests $(2,3,4)^+$.
4227.2 *3*	$(2)^+$		J$^\pi$: log *ft*=6.26 of this dataset suggests (2,3,4).
4297.70 *14*	$(2)^+$		J$^\pi$: log *ft*=5.09 of this dataset suggests $(2,3,4)^+$.
4509.8 *10*	$(2)^+$		J$^\pi$: log *ft*=6.81 of this dataset suggests (2,3,4).

[†] E(levels) are based on a least-squares fit to the Eγ's.

[‡] From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-[†]	Log *ft*	Comments
(4.71×10^3 *15*)	4509.8	0.20 *8*	6.81 *19*	av Eβ=2051 *71*
5.01×10^3 *16*	4297.70	12.9 *12*	5.09 *8*	av Eβ=2152 *72* E(decay): weighted average of 4.98 MeV *18* and 5.10 MeV *34* (1978Al18).
(4.99×10^3 *15*)	4227.2	0.91 *22*	6.26 *13*	av Eβ=2185 *72*
(5.00×10^3 *15*)	4219.87	3.3 *3*	5.71 *8*	av Eβ=2189 *72*
(5.14×10^3 *15*)	4075.03	3.1 *3*	5.79 *8*	av Eβ=2257 *72*
(5.18×10^3 *15*)	4038.01	2.29 *24*	5.93 *8*	av Eβ=2275 *72*
(5.22×10^3 *15*)	3997.61	3.66 *24*	5.75 *7*	av Eβ=2294 *72*
(5.27×10^3 *15*)	3954.85	5.9 *5*	5.55 *8*	av Eβ=2314 *72*
(5.33×10^3 *15*)	3886.39	3.9 *4*	5.76 *8*	av Eβ=2347 *72*

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^{128}In β^- decay (0.84 s) 1979Fo10 (continued)

β^- radiations (continued)

E(decay)	E(level)	Iβ^-[†]	Log *ft*	Comments
(5.70×10^3 *15*)	3519.86	18.5 *19*	5.21 *8*	av Eβ=2521 *72*
(5.99×10^3 *15*)	3225.6	1.24 *14*	6.48 *8*	av Eβ=2660 *72*
(6.13×10^3 *15*)	3091.97	1.55 *16*	6.43 *8*	av Eβ=2724 *72*
(6.27×10^3 *15*)	2952.46	1.32 *17*	6.54 *8*	av Eβ=2790 *72*
(6.46×10^3 *15*)	2756.54	0.65 *25*	6.91 *18*	av Eβ=2883 *72*
(6.58×10^3 *15*)	2642.27	1.93 *10*	6.47 *6*	av Eβ=2937 *72*
(6.59×10^3 *15*)	2633.09	2.1 *3*	6.43 *9*	av Eβ=2941 *72*
(6.64×10^3 *15*)	2578.62	2.36 *21*	6.40 *7*	av Eβ=2967 *72*
(6.95×10^3 *15*)	2274.06	1.12 *16*	6.81 *9*	av Eβ=3111 *71*
(6.96×10^3 *15*)	2258.36	3.6 *7*	6.31 *10*	av Eβ=3119 *71*
(7.12×10^3 *15*)	2104.07	12.6 *10*	5.81 *7*	av Eβ=3192 *71*
(8.05×10^3 *15*)	1168.82	17 *6*	5.92 *16*	av Eβ=3635 *71*

[†] Absolute intensity per 100 decays.

$\gamma(^{128}Sn)$

Iγ normalization: Σ Iγ(to g.s.)=100 and no β^-feeding to g.s.

E$_\gamma$	I$_\gamma$[#]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
310.48[†‡] *20*	0.18 *4*	2952.46	(2$^-$,3,4$^+$)	2642.27	(2$^-$,3,4$^+$)	
[x]384.03[†] *25*	0.15 *4*					
449.67 *7*	0.55 *7*	3091.97	(2$^-$,3,4$^+$)	2642.27	(2$^-$,3,4$^+$)	
[x]468.0[†] *3*	0.11 *4*					
474.50[†‡] *15*	0.26 *6*	2578.62	(2)$^+$	2104.07	(2)$^+$	
538.16 *5*	1.20 *8*	2642.27	(2$^-$,3,4$^+$)	2104.07	(2)$^+$	
583.3 *3*	0.24 *6*	3225.6	(2)$^+$	2642.27	(2$^-$,3,4$^+$)	
[x]704.06[†] *15*	0.42 *6*					
[x]760.2[†] *3*	0.22 *7*					
886.88[†‡] *15*	0.45 *10*	3519.86	(2)$^+$	2633.09	(2$^-$,3,4$^+$)	
935.20 *5*	8.0 *5*	2104.07	(2)$^+$	1168.82	(2)$^+$	I$_\gamma$: other: 6.5 *6* per 100 decays (1986Go10).
1045.19 *25*	0.36 *10*	3997.61	(3,4)$^+$	2952.46	(2$^-$,3,4$^+$)	
[x]1082.19[†] *20*	0.42 *7*					
1089.53 *10*	7.4 *5*	2258.36	(2)$^+$	1168.82	(2)$^+$	
1105.20 *10*	1.5 *1*	2274.06	(2$^-$,3,4$^+$)	1168.82	(2)$^+$	
[x]1123.13[†] *15*	0.48 *6*					
1130.31 *25*	0.26 *6*	3886.39	(2)$^+$	2756.54	(2$^-$,3,4$^+$)	
1168.80 *5*	50 *3*	1168.82	(2)$^+$	0.0	0$^+$	
[x]1236.46[†] *25*	0.31 *7*					
1241.01 *10*	0.9 *1*	3997.61	(3,4)$^+$	2756.54	(2$^-$,3,4$^+$)	
1281.42 *15*	0.59 *7*	4038.01	(2)$^+$	2756.54	(2$^-$,3,4$^+$)	
1409.80 *10*	1.1 *1*	2578.62	(2)$^+$	1168.82	(2)$^+$	
1464.31 *10*	2.5 *2*	2633.09	(2$^-$,3,4$^+$)	1168.82	(2)$^+$	
1473.55 *10*	1.7 *1*	2642.27	(2$^-$,3,4$^+$)	1168.82	(2)$^+$	
[x]1514.79[†] *25*	0.42 *10*					
1587.69 *15*	2.4 *2*	2756.54	(2$^-$,3,4$^+$)	1168.82	(2)$^+$	
[x]1593.6[†] *3*	0.34 *7*					

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^{128}In β^- decay (0.84 s) 1979Fo10 (continued)

$\gamma(^{128}Sn)$ (continued)

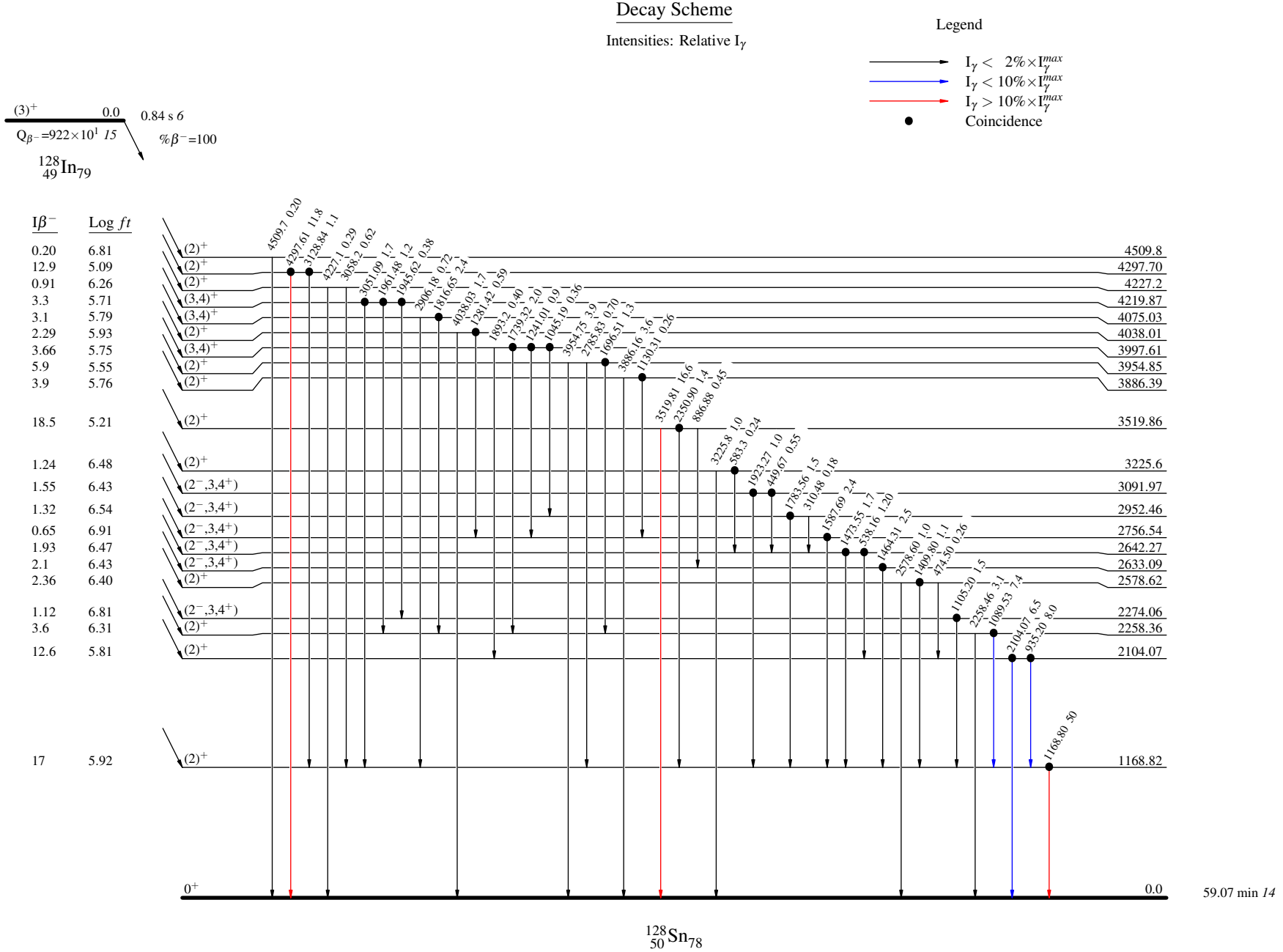
E_γ	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π
[x]1678.4[†] *3*	0.36 *7*				
1696.51 *10*	1.3 *1*	3954.85	$(2)^+$	2258.36	$(2)^+$
1739.32 *10*	2.0 *1*	3997.61	$(3,4)^+$	2258.36	$(2)^+$
1783.56 *10*	1.5 *1*	2952.46	$(2^-,3,4^+)$	1168.82	$(2)^+$
1816.65 *10*	2.4 *2*	4075.03	$(3,4)^+$	2258.36	$(2)^+$
1893.2[†‡] *3*	0.40 *10*	3997.61	$(3,4)^+$	2104.07	$(2)^+$
1923.27 *15*	1.0 *1*	3091.97	$(2^-,3,4^+)$	1168.82	$(2)^+$
1945.62 *25*	0.38 *10*	4219.87	$(3,4)^+$	2274.06	$(2^-,3,4^+)$
1961.48 *10*	1.2 *1*	4219.87	$(3,4)^+$	2258.36	$(2)^+$
[x]1967.8[†] *4*	0.31 *10*				
2104.07 *10*	6.5 *4*	2104.07	$(2)^+$	0.0	0^+
[x]2205.2[†] *5*	0.37 *10*				
2258.46 *10*	3.1 *2*	2258.36	$(2)^+$	0.0	0^+
2350.90 *15*	1.4 *1*	3519.86	$(2)^+$	1168.82	$(2)^+$
2578.60 *15*	1.0 *1*	2578.62	$(2)^+$	0.0	0^+
2785.83 *25*	0.70 *10*	3954.85	$(2)^+$	1168.82	$(2)^+$
2906.18 *15*	0.72 *10*	4075.03	$(3,4)^+$	1168.82	$(2)^+$
3051.09 *15*	1.7 *2*	4219.87	$(3,4)^+$	1168.82	$(2)^+$
3058.2 *9*	0.62 *20*	4227.2	$(2)^+$	1168.82	$(2)^+$
3128.84 *20*	1.1 *1*	4297.70	$(2)^+$	1168.82	$(2)^+$
3225.8 *5*	1.0 *1*	3225.6	$(2)^+$	0.0	0^+
3519.81 *15*	16.6 *15*	3519.86	$(2)^+$	0.0	0^+
3886.16 *15*	3.6 *3*	3886.39	$(2)^+$	0.0	0^+
3954.75 *15*	3.9 *3*	3954.85	$(2)^+$	0.0	0^+
4038.03 *20*	1.7 *2*	4038.01	$(2)^+$	0.0	0^+
4227.1 *3*	0.29 *7*	4227.2	$(2)^+$	0.0	0^+
4297.61 *20*	11.8 *8*	4297.70	$(2)^+$	0.0	0^+
4509.7 *10*	0.20 *7*	4509.8	$(2)^+$	0.0	0^+

[†] Isomeric assignment uncertain.
[‡] Not placed in the decay scheme in 1979Fo10.
[#] For absolute intensity per 100 decays, multiply by 1.00 *6*.
[x] γ ray not placed in level scheme.

^{128}In β^- decay (0.84 s) 1979Fo10

Decay Scheme

Intensities: Relative I_γ



$^{128}_{50}Sn_{78}$-4