^{197}Ir β^- decay (5.8 min+8.9 min) 1976PeZW,1978PeZJ

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong, Zhou Chunmei	NDS 104, 283 (2005)	1-Jan-2002

Parent: ^{197}Ir: E=0.0; $J^\pi=3/2^+$; $T_{1/2}$=5.8 min *5*; Q(β^-)=2155 *20*; %β^- decay=100.0
Parent: ^{197}Ir: E=115 *5*; $J^\pi=11/2^-$; $T_{1/2}$=8.9 min *3*; Q(β^-)=2155 *20*; %β^- decay=99.75 *10*
Sources produced by ^{198}Pt(n,pn) (1954Bu02) and ^{198}Pt(γ,p) (1987Da29,1978BeZJ,1961Ho10).
Measured results could not be separated.
Others: 1952Ch18, 1954Bu02, 1961Ho10, 1974Al25, 1976HiZF.
Preliminary decay scheme; γ rays may originate from ^{197}Ir isomer and/or g.s.

^{197}Pt Levels

E(level)†	J^π‡	$T_{1/2}$‡	Comments
0.0	$1/2^-$	19.8915 h *19*	
53.099 *20*	$5/2^-$	16.58 ns *17*	
71.66 *12*	$3/2^-$		
268.92 *8*	$1/2^-$,$3/2^-$		
299.56 *5*	$5/2^-$		Branching: Iγ(228γ):Iγ(246γ):Iγ(299γ)=18:35:100.
399.59 *20*	$13/2^+$	95.41 min *18*	
456.85 *8*	$5/2^-$		Branching: Iγ(157γ):Iγ(404γ):Iγ(457γ)=11:13:100.
708.18 *17*	$3/2^-$		

† From decay scheme and Eγ's by using least-squares fit to data.
‡ From Adopted Levels.

γ(^{197}Pt)

Iγ normalization: Cannot be given.
γ-placements are consistent with Iγ-branching ratios via (n,γ) study (1978Ya07).

E_γ†	I_γ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.#	α&	$I_{(\gamma+ce)}$	Comments
53.10 *2*	86	53.099	$5/2^-$	0.0	$1/2^-$	E2	87.5		α(L)=65.6; α(M)= 16.86; α(N+..)= 5.12
(71.53 *17*)		71.66	$3/2^-$	0.0	$1/2^-$	[M1,E2]@	12.0 *87*	62 *10*	Eγ: from (n,γ) (1978Ya07); not reported in decay studies but required by intensity balance arguments. Additional information 1.
x135.10 *3*	272								
157.22 *7*	39	456.85	$5/2^-$	299.56	$5/2^-$	[M1,E2]@	1.38 *53*		Additional information 5.
227.82 *14*	43	299.56	$5/2^-$	71.66	$3/2^-$	[M1,E2]@	0.45 *22*		Additional information 3.
x228.78 *20*	23								
246.38 *8*	82	299.56	$5/2^-$	53.099	$5/2^-$	[M1,E2]@	0.36 *18*		Additional information 4.
268.92 *8*	127	268.92	$1/2^-$,$3/2^-$	0.0	$1/2^-$	[M1,E2]@	0.28 *14*		Additional information 2.
x273.77 *29*	25								

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$\gamma(^{197}Pt)$ (continued)

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [#]	α [&]	Comments
299.58 *7*	237	299.56	5/2$^-$	0.0	1/2$^-$	[E2] [@]	0.100	α(K)= 0.0618; α(L)= 0.0288; α(M)=0.00718; α(N+..)=0.00220
[x]339.32 *21*	54							
[x]340.16 *25*	47							
346.5 *2*		399.59	13/2$^+$	53.099	5/2$^-$	M4	7.71	α(K)= 4.40; α(L)= 2.447; α(M)= 0.657; α(N+..)= 0.2083
[x]378.32 *5*	377							
404.12 *16*	58	456.85	5/2$^-$	53.099	5/2$^-$	[M1,E2] [@]	0.09 *5*	Additional information 6.
[x]405.82 *13*	93							
[x]430.56 *7*	611							
456.83 *20*	372	456.85	5/2$^-$	0.0	1/2$^-$	[E2] [@]	0.0312	α(K)=0.02251; α(L)=0.00662; α(M)=0.00162; α(N+..)=0.00050
[x]469.72 *4*	1000							
[x]496.44 *6*	362							
[x]509.14 *25*	206							
[x]527.18 *5*	239							
[x]533.87 *13*	59							
[x]539.20 *8*	145							
[x]542.02 *9*	106							
[x]563.49 *22*	45							
[x]644.2 *5*								
708.18 *17*	50	708.18	3/2$^-$	0.0	1/2$^-$	[M1,E2] [@]	0.022 *11*	Additional information 7.
[x]715.32 *12*	91							
[x]738.83 *42*	12							
[x]791.68 *22*	50							
[x]809.12 *6*	319							
[x]815.92 *6*	450							
[x]849.49 *17*	66							
[x]861.52 *15*	60							
[x]866.44 *8*	132							
[x]873.31 *11*	64							
[x]887.86 *20*	46							
[x]939.41 *8*	207							
[x]987.13 *9*	146							
[x]1008.03 *31*	17							
[x]1053.53 *29*	18							
[x]1062.17 *26*	19							
[x]1343.22 *10*	211							

[†] From ^{197}Ir isomer and/or g.s., except as noted.
[‡] Relative photon intensity normalized to Iγ(469.72γ)=1000.
[#] From adopted γ-ray radiations, except as noted.
[@] From ΔJ and $\Delta\pi$ between transition levels.
[&] 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.
[x] γ ray not placed in level scheme.

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Decay Scheme

Intensities: Relative $I_{(\gamma+ce)}$