^{192}Pt(^{16}O,4nγ) 1981Ho29

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. J. Chiara and F. G. Kondev	NDS 111,141 (2010)	1-Oct-2009

1981Ho29: E(^{16}O)=85-110 MeV; ^{192}Pt target, enriched to 57%; measured Eγ, Iγ, $\gamma\gamma$(t) withGe(Li) detectors. Others: 1977BaZW, 1994Fr11.

^{204}Rn Levels

E(level)†	J$^\pi$‡	T$_{1/2}$‡	Comments
0	0$^+$		
542.9 *3*	2$^+$		
1131.4 *5*	4$^+$		
1772.6 *5*	6$^+$		
1806.3 *5*	6$^+$		Possible Configuration=(π f$_{7/2}$6$^+$).
2032.8 *6*	8$^+$	<5 ns	Possible Configuration=(π h$_{9/2}$8$^+$).
2105.2 *6*	8$^+$		
2219.0 *6*	9$^-$		
2453.1? *7*			
2461.3 *7*	10$^{(-)}$	33 ns *3*	T$_{1/2}$: From 242γ(t). The 242γ directly depopulates the isomer, since it shows no prompt component. The same value for T$_{1/2}$ is obtained using 543γ(t). Possible Configuration=(((π f$_{7/2}$)$^{+1}$(π i$_{13/2}$)$^{+1}$)$_{10-}$.
2597.1 *7*	11		
2636.4 *12*			
2884.4 *10*	12		
3034.9 *7*	12		
3165.6 *10*			
3305.9 *7*	13		
3467.8 *14*			
3531.8 *9*	(14)		
3983.9 *10*	(14)		
4095.9 *11*	(15)	≈10 ns	T$_{1/2}$: The lifetime assignment to the 4096 level is not definite.
4253.8 *14*			

† From a least-squares fit to Eγ.
‡ From 1981Ho29.

γ(^{204}Rn)

Uncertainties in Eγ and Iγ are from D. Horn priv. comm., 1986. For weak gammas no Iγ or I(γ+ce) was quoted by 1981Ho29.

E$_\gamma$#	I$_\gamma$#	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.‡	α†	I$_{(\gamma+ce)}$@	Comments
112		4095.9	(15)	3983.9	(14)				
113.7 *3*	15 *2*	2219.0	9$^-$	2105.2	8$^+$	E1	0.341 *6*	20	α(K)=0.267 *4*; α(L)=0.0561 *9*; α(M)=0.01341 *21*; α(N+..)=0.00426 *7* α(N)=0.00344 *6*; α(O)=0.000720 *12*; α(P)=9.29×10^{-5} *15* Mult.: α(exp) deduced from intensity balances consideration favors E1 rather than M1 assignment; A$_2$=−0.18 *10*.
135.9 *3*	24 *4*	2597.1	11	2461.3	10$^{(-)}$	D		29	α(K)=0.175 *3*; α(L)=0.0351 *6*; α(M)=0.00837 *13*; α(N+..)=0.00266 *4* α(N)=0.00215 *4*; α(O)=0.000453 *7*;

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^{192}Pt(^{16}O,4nγ) 1981Ho29 (continued)

γ(^{204}Rn) (continued)

E_γ[#]	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[†]	$I_{(\gamma+ce)}$[@]	Comments
									α(P)=5.92×10^{-5} *9* I_γ: Assuming a pure E1. Mult.: A_2=−0.26 *14*.
186.3 *3*	18 *4*	2219.0	9$^-$	2032.8	8$^+$	E1	0.1022	19	α(K)=0.0818 *12*; α(L)=0.01552 *23*; α(M)=0.00369 *6*; α(N+..)=0.001180 *18* α(N)=0.000951 *14*; α(O)=0.000202 *3*; α(P)=2.70×10^{-5} *4* Mult.: A_2=−0.31 *15*.
226		3531.8	(14)	3305.9	13				
234.1 *3*	18 *2*	2453.1?		2219.0	9$^-$	D		24	A_2=0.00 *5*. I_γ: Assuming a pure M1.
242.4 *3*	23 *2*	2461.3	10$^{(-)}$	2219.0	9$^-$	(M1)	1.076	50	α(K)=0.870 *13*; α(L)=0.1564 *23*; α(M)=0.0371 *6*; α(N+..)=0.01210 *18* α(N)=0.00968 *14*; α(O)=0.00212 *3*; α(P)=0.000309 *5* Mult.: M1 suggested by 1981Ho29 on the basis of $T_{1/2}$; however, intensity balance favors E1; A_2=−0.22 *11*.
260.2 *3*	26 *2*	2032.8	8$^+$	1772.6	6$^+$	(E2)	0.215	30	α(K)=0.0939 *14*; α(L)=0.0895 *14*; α(M)=0.0237 *4*; α(N+..)=0.00758 *12* α(N)=0.00617 *10*; α(O)=0.001264 *19*; α(P)=0.0001492 *22* A_2=0.07 *5*.
270.5		3305.9	13	3034.9	12				
288		2884.4	12	2597.1	11				
298.9 *3*	46 *2*	2105.2	8$^+$	1806.3	6$^+$	E2	0.1395	51	α(K)=0.0695 *10*; α(L)=0.0520 *8*; α(M)=0.01367 *20*; α(N+..)=0.00438 *7* α(N)=0.00356 *6*; α(O)=0.000733 *11*; α(P)=8.79×10^{-5} *13* Mult.: A_2=0.16 *3*.
366.0		3531.8	(14)	3165.6					
422.5		2884.4	12	2461.3	10$^{(-)}$				
438.0		3034.9	12	2597.1	11				
452		3983.9	(14)	3531.8	(14)				
497		3531.8	(14)	3034.9	12				
542.9 *3*	100	542.9	2$^+$	0	0$^+$	E2	0.0290	100	α(K)=0.0201 *3*; α(L)=0.00671 *10*; α(M)=0.001695 *24*; α(N+..)=0.000546 *8* α(N)=0.000441 *7*; α(O)=9.29×10^{-5} *14*; α(P)=1.207×10^{-5} *17* Mult.: A_2=0.15 *1*.
568.3		3165.6		2597.1	11				
581.7 *3*	20 *3*	3034.9	12	2453.1?		(E2)	0.0248	20	α(K)=0.01752 *25*; α(L)=0.00547 *8*; α(M)=0.001374 *20*; α(N+..)=0.000443 *7* α(N)=0.000358 *5*; α(O)=7.55×10^{-5} *11*; α(P)=9.90×10^{-6} *14* Mult.: A_2=0.11 *7*.
583.4		3467.8		2884.4	12				
588.5 *3*	95 *2*	1131.4	4$^+$	542.9	2$^+$	E2	0.0242	95	α(K)=0.01713 *24*; α(L)=0.00529 *8*; α(M)=0.001327 *19*; α(N+..)=0.000428 *6* α(N)=0.000346 *5*; α(O)=7.30×10^{-5} *11*; α(P)=9.59×10^{-6} *14* Mult.: A_2=0.10 *1*.
603.6		2636.4		2032.8	8$^+$				
641.3 *3*	37 *2*	1772.6	6$^+$	1131.4	4$^+$	(E2)	0.0200	37	α(K)=0.01451 *21*; α(L)=0.00414 *6*; α(M)=0.001033 *15*; α(N+..)=0.000333 *5*

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^{192}Pt(^{16}O,4nγ) 1981Ho29 (continued)

$\gamma(^{204}Rn)$ (continued)

E_γ[#]	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[†]	$I_{(\gamma+ce)}$[@]	Comments
									α(N)=0.000269 *4*; α(O)=5.70×10^{-5} *8*; α(P)=7.57×10^{-6} *11* Mult.: A_2=0.11 *3*.
674.8 *3*	57 *2*	1806.3	6$^+$	1131.4	4$^+$	(E2)	0.0180	57	α(K)=0.01317 *19*; α(L)=0.00360 *5*; α(M)=0.000894 *13*; α(N+..)=0.000289 *4* α(N)=0.000233 *4*; α(O)=4.94×10^{-5} *7*; α(P)=6.61×10^{-6} *10* A_2=0.04 *4*.
678		3983.9	(14)	3305.9	13				
708.9 *3*	12 *2*	3305.9	13	2597.1	11	E2	0.01618	12	α(K)=0.01199 *17*; α(L)=0.00315 *5*; α(M)=0.000781 *11*; α(N+..)=0.000252 *4* α(N)=0.000203 *3*; α(O)=4.32×10^{-5} *6*; α(P)=5.81×10^{-6} *9* Mult.: A_2=0.25 *5*.
722		4253.8		3531.8	(14)				
790		4095.9	(15)	3305.9	13				

† Additional information 1.
‡ Based on $\gamma(\theta)$ and intensity balance in 1981Ho29.
# From 1981Ho29, where I(γ+ce) at E(^{16}O)=95 MeV are reported, but converted to Iγ by the evaluators using α.
@ From 1981Ho29.

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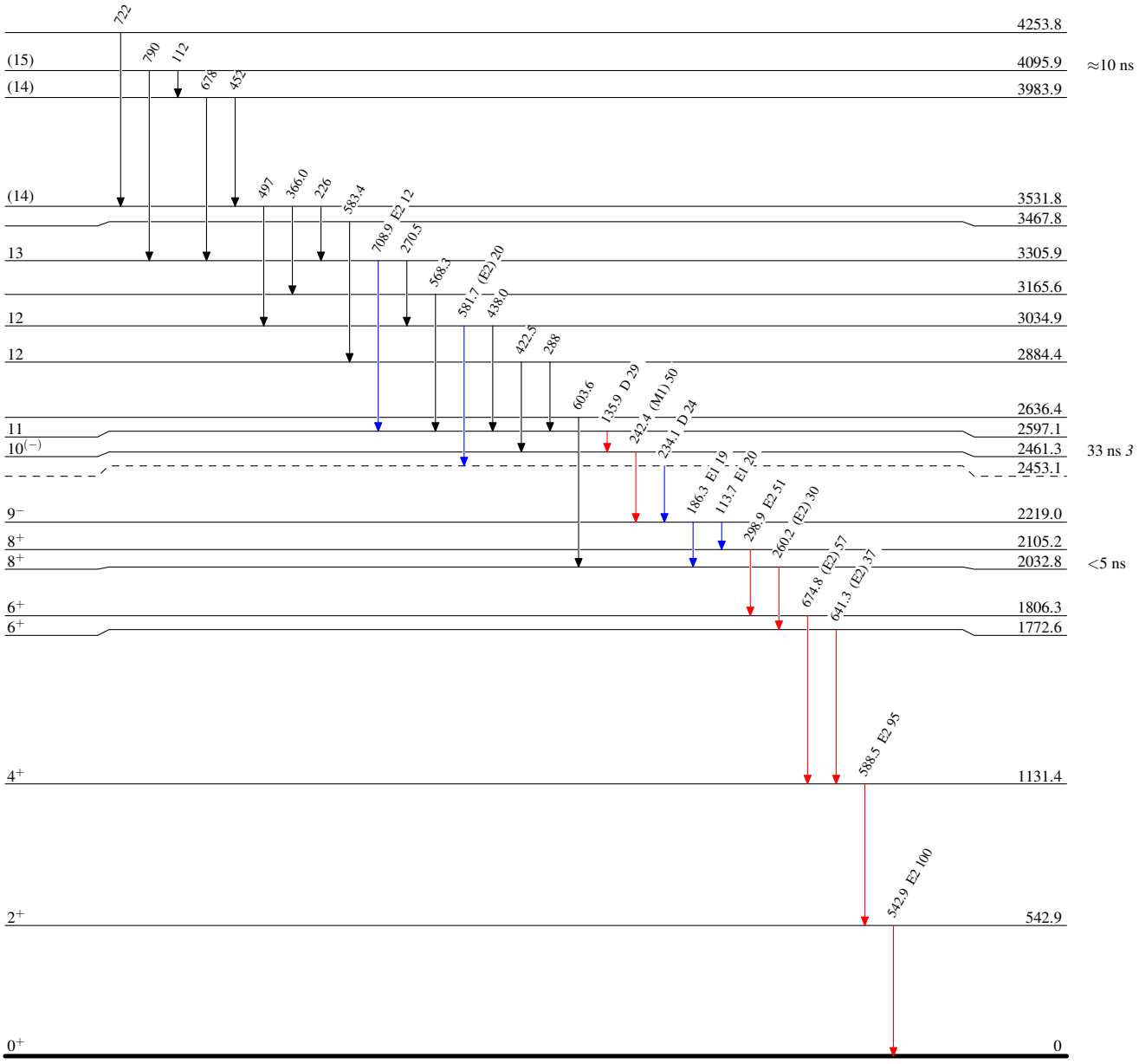
Level Scheme

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

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



$^{204}_{86}Rn_{118}$