^{199}Pt IT decay (13.6 s) 1959Wa15,1973Ur01

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 108, 79 (2007)	15-Oct-2006

Parent: ^{199}Pt: E=424 *2*; $J^\pi=(13/2)^+$; $T_{1/2}$=13.6 s *4*; %IT decay=100.0

^{199}Pt-%IT decay: From log *ft* systematics, estimated $\%\beta^-<0.06$ (log *ft*>5.1 to 549, $(11/2)^-$ level in ^{199}Au).

1973Ur01: produced by ^{198}Pt(n,γ) E(n)=15.0 MeV *4*, enriched target, semiconductor detector.

1959Wa15: E(n)=th, enriched target, scintillation detectors.

The ordering of the E3 and M1 gammas is inferred from systematics and from $T_{1/2}$.

No evidence for β^- decay found (1959Wa15).

Additional information 1.

^{199}Pt Levels

E(level)	J^π[†]	$T_{1/2}$	Comments
0.0	$5/2^-$	30.80 min *21*	J^π: expect $3/2^-$ or $5/2^-$ in this region. Supported by M1 assignment to 32-keV G. $T_{1/2}$: from 'Adopted Levels'.
32 *2*	$(7/2)^-$		
424 *2*	$(13/2)^+$	13.6 s *4*	$T_{1/2}$: weighted average of 13.3 s *2* (1973Ur01), 14.1 s *3* (1959Wa15).

[†] From 'Adopted Levels'.

$\gamma(^{199}Pt)$

No crossover 424-keV γ observed (1959Wa15).

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α[‡]	$I_{(\gamma+ce)}$[†]	Comments
32 *2*		32	$(7/2)^-$	0.0	$5/2^-$	M1	35 *7*	118.0 *5*	ce(L)/(γ+ce)=0.744 *4*; ce(M)/(γ+ce)=0.172 *1* E_γ: from 1959Wa15. $I_{(\gamma+ce)}$: calculated from intensity balance; I$\gamma\approx$3.3 from I(γ+ce) and α. Mult.: deduced from α(exp)=20-25 (1959Wa15); theory: α(E1)=1.8 *4*, α(E2)=1060 *400*. α: uncertainty in α due to ΔE.
391.93 *14*	100	424	$(13/2)^+$	32	$(7/2)^-$	E3	0.177		α(K)= 0.0852; α(L)= 0.0712; α(M)=0.0183; α(N+..)=0.00568 E_γ: from 1973Ur01. Mult.: from α(K)exp=0.087 (from (K x ray)/γ, 1959Wa15) and $T_{1/2}$; theory: α(K)(E2)=0.0322, α(K)(E3)=0.0852, α(K)(E4)=0.225, α(K)(M1)=0.127. B(E3)(W.u.)=2.26×10^{-5} *7*; γ transition is highly hindered, consistent with core-excitation model.

[†] For absolute intensity per 100 decays, multiply by 0.849 *5*.

[‡] 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.

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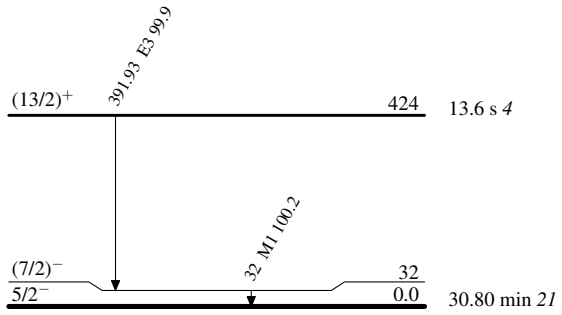
Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
%IT=100.0



$^{199}_{78}Pt_{121}$