

^{187}Au IT decay (2.3 s) [1983Br26,1978Bo05](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 110, 999 (2009)	1-Nov-2008

Parent: ^{187}Au : E=120.6 2; $J^\pi=9/2^{-}$; $T_{1/2}=2.3$ s *I*; %IT decay=100.0

[1983Br26](#): On-line mass-separated sources of $^{187\text{m}}\text{Au}$ from $^{178}\text{Hf}(^{14}\text{N},5\text{n})$ reaction, E=103 MeV, on natural Hf foils at Oak Ridge Isochronous Cyclotron UNISOR facility.

[1978Bo05](#): On-line mass separated ^{187}Hg from $\text{Au}(p,\text{xn})\text{Hg}$; Detector: Ge(Li), Si(Li); Measured E_γ , I_γ , α , $\gamma\gamma$ coin, ceG-coin, Gce (t), deduced levels, J, π , mult.

 ^{187}Au Levels

E(level)	J^π	$T_{1/2}$	Comments
0.0	$1/2^{+}$		
19.5 2	$3/2^{+}\dagger\dagger$	6 ns <i>I</i>	$T_{1/2}$: From Ce(19.5L)(t) (1978Bo05).
120.6 2	$9/2^{-}\ddagger$	2.3 s <i>I</i>	$T_{1/2}$: From Ce(t)– 1983Br26 . The uncertainty is at 95% confidence level.

$\dagger$ For (prolate) configuration: $3/2^{+}[402]$ (19.5 keV level) and configuration: $1/2^{+}[400]$ (g.s.) $B(M1)=0.0018$; and for (oblate) configuration: $3/2^{+}[431]$ (19.5 keV) and configuration: $1/2^{+}[431]$ (g.s.) $B(M1)=0.59$, calculated by [1978Bo05](#).

$\ddagger$ The hindrance of 101.1 γ E3 isomeric transition is consistent with the analogous h9/2 to d3/2 E3 transitions in ^{191}Tl to ^{201}Tl .

 $\gamma(^{187}\text{Au})$

$E_\gamma\dagger$	$I_\gamma\dagger\ddagger$	$E_i(\text{level})$	J^π_i	E_f	J^π_f	Mult.	$\alpha^@$	$I_{(\gamma+ce)}\#$	Comments
19.5 4		19.5	$3/2^{+}$	0.0	$1/2^{+}$	(M1+E2)	7×10^3 6		$\alpha(\text{L})=5.\text{E}3$ 5; $\alpha(\text{M})=1.3\times 10^3$ 13; $\alpha(\text{N}+..)=4.\text{E}2$ 4 $\alpha(\text{N})=3.\text{E}2$ 3; $\alpha(\text{O})=5.\text{E}1$ 5; $\alpha(\text{P})=0.083$ 6 Mult.: Assigned from an estimated M/N subshell ratio, observing a conversion electron spectrum (fig 5- 1978Bo05) by the evaluator.
101.1 2	0.83 2	120.6	$9/2^{-}$	19.5	$3/2^{+}$	E3	119.7 22	100	$\alpha(\text{K})=0.927$ 14; $\alpha(\text{L})=87.3$ 16; $\alpha(\text{M})=24.5$ 5; $\alpha(\text{N}+..)=7.07$ 13 $\alpha(\text{N})=6.10$ 11; $\alpha(\text{O})=0.970$ 18; $\alpha(\text{P})=0.00184$ 3 Mult.: $\alpha(\text{L})_{\text{exp}}=75$ 20, L1/L2<0.1, L2/L3 $\approx$ 1.3 (1978Bo05).

$\dagger$ From [1978Bo05](#).

$\ddagger$ Deduced from $\text{TI}/(1+\text{CC})$.

$\#$ Absolute intensity per 100 decays.

$@$ 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

