^{151}Tm ε decay (6.6 s) 1990Ak01,1988Ba02

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 110, 1 (2009)	20-Nov-2008

Parent: ^{151}Tm: E=0+x; J^π=(1/2$^+$); $T_{1/2}$=6.6 s *20*; Q(ε)=7484 *26*; %ε+%$β^+$ decay=100.0

^{151}Tm-E: x=50 keV *50* (estimated from syst by 1990Ak01).

1990Ak01: ^{96}Ru(^{58}Ni,2pn) and ^{96}Ru(^{58}Ni,3p) E=250 MeV. Mass separation of α=151 products. Measured γ, γγ.

1988Ba02: source produced in ^{96}Mo(^{58}Ni,3p2n). Mass-separated. Isotopic identification was made on the basis of coincidences with Er x rays. Measured: γγ, γ(t), (x ray)γ coin.

^{151}Er Levels

E(level)	J^π
0.0	(7/2$^-$)
984.1 *4*	(3/2$^-$)
1206.2 *6*	(1/2$^-$)
2032.4? *8*	(1/2,3/2)
2621.5 *7*	(1/2$^+$,3/2$^+$)
2966 *2*	(1/2$^+$,3/2$^+$)
3051 *2*	(1/2$^+$,3/2$^+$)

ε,$β^+$ radiations

E(decay)	E(level)	Iβ$^+$ ‡	Iε‡	Log *ft*†	I(ε+β$^+$)†‡	Comments
(4.43×10^3 *3*)	3051	9 *4*	7 *3*	4.4	16 *7*	av Eβ=1569 *26*; εK=0.341 *10*; εL=0.0520 *15*; εM+=0.0154 *5*
(4.52×10^3 *3*)	2966	10 *4*	6 *3*	4.4	16 *7*	av Eβ=1609 *26*; εK=0.327 *10*; εL=0.0499 *15*; εM+=0.0148 *5*
(4.86×10^3 *3*)	2621.5	22 *5*	11 *2*	4.2	33 *7*	av Eβ=1768 *27*; εK=0.275 *8*; εL=0.0419 *13*; εM+=0.0124 *4*
(5.45×10^3 *3*)	2032.4?	2.0 *7*	0.64 *22*	5.6	2.6 *9*	av Eβ=2043 *27*; εK=0.205 *6*; εL=0.0312 *9*; εM+=0.0092 *3*
(6.28×10^3 *3*)	1206.2	3.2 *7*	0.63 *13*	5.7	3.8 *8*	av Eβ=2431 *27*; εK=0.139 *4*; εL=0.0211 *6*; εM+=0.00626 *17*
(6.50×10^3 *3*)	984.1	25 *20*	4 *4*	4.9	29 *24*	av Eβ=2536 *27*; εK=0.126 *4*; εL=0.0191 *5*; εM+=0.00566 *15*

† All values are considered as approximate due to large energy gap of about 4.4 MeV between Q value and highest known populated level.

‡ Absolute intensity per 100 decays.

γ(^{151}Er)

Iγ normalization: from I(γ+ce)(984γ)=100.

E_γ†	I_γ†‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α#	Comments
222.1 *4*	2.9 *6*	1206.2	(1/2$^-$)	984.1	(3/2$^-$)	[M1,E2]	0.24 *7*	α(K)=0.19 *7*; α(L)=0.041 *4*; α(M)=0.0095 *12*; α(N+..)=0.0025 *3* α(N)=0.0022 *3*; α(O)=0.000292 *13*; α(P)=1.1×10^{-5} *5*
984.1 *4*	100 *20*	984.1	(3/2$^-$)	0.0	(7/2$^-$)			

Continued on next page (footnotes at end of table)

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γ(^{151}Er) (continued)

E_γ[†]	I_γ[†‡]	E_i(level)	J_i^π	E_f	J_f^π
1048.3[@] *6*	2.6 *9*	2032.4?	(1/2,3/2)	984.1	(3/2$^-$)
1637.4 *5*	33 *7*	2621.5	(1/2$^+$,3/2$^+$)	984.1	(3/2$^-$)
1982 *2*	16 *7*	2966	(1/2$^+$,3/2$^+$)	984.1	(3/2$^-$)
2067 *2*	16 *7*	3051	(1/2$^+$,3/2$^+$)	984.1	(3/2$^-$)

[†] From 1990Ak01. 1988Ba02 report only the 984γ.
[‡] 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.
[@] Placement of transition in the level scheme is uncertain.

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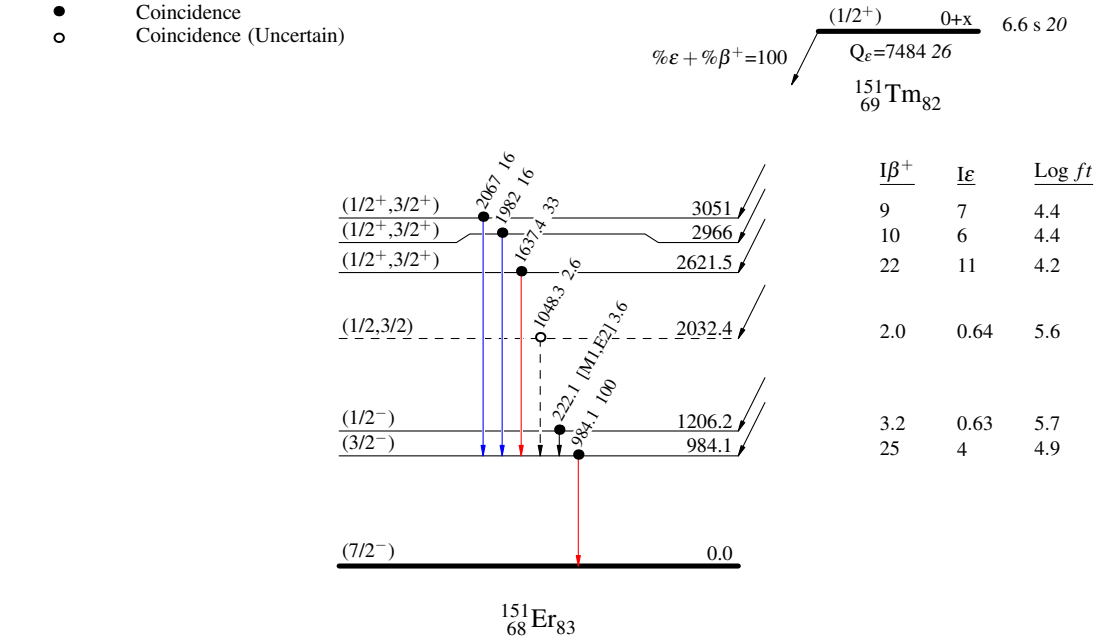
Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)
- Coincidence
- Coincidence (Uncertain)

Decay Scheme

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



	Iβ+	Iε	Log *ft*
3051	9	7	4.4
2966	10	6	4.4
2621.5	22	11	4.2
2032.4	2.0	0.64	5.6
1206.2	3.2	0.63	5.7
984.1	25	4	4.9