^{146}Tb IT decay 1989Br22,1984Br07,2011Ko08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov, A. Rodionov and G. Shulyak	NDS 136,163 (2016)	14-Jul-2016

Parent: ^{146}Tb: E=779.57+x *16*; $J^\pi=10^+$; $T_{1/2}$=1.20 ms *3*; %IT decay=100

1989Br22,1984Br07: ^{146}Tb IT decay [from ^{89}Y(^{60}Ni,2pnγ), E=245 MeV]; measured Eγ, Iγ, $\gamma\gamma$, KXγ coin, $T_{1/2}$. ^{146}Tb; deduced levels, J^π, isomer, configurations. Argonne Superconducting Linac, Ge detectors.

2011Ko08: ^{146}Tb IT decay [from ^{112}Sn(^{40}Ar,3p3nγ), E=232 MeV]; measured Eγ, Iγ, ce, $\gamma\gamma$, ceγ coin, $T_{1/2}$. ^{146}Tb; deduced levels, α(exp), δ, J^π, configurations. OSIRIS-II array, electron spectrometer.

Other: 1981StZO.

The ^{146}Tb IT decay level scheme is the same as proposed in 1989Br22 and 2011Ko08.

^{146}Tb Levels

E(level)†	J^π‡	$T_{1/2}$	Comments
0.0+x	5^-		Additional information 1. configuration: $\pi h_{11/2}\nu d^{-1}_{3/2}$, probable admixture of $\pi h_{11/2}\nu s^{-1}_{1/2}$ (2011Ko08). E(level): the value is not known exactly relative to ground state (150 keV *110* higher g.s. (from systematics, 2012Au07)).
18.73+x *13*	$(5^-,6^-)$		configuration: $\pi h_{11/2}\nu s^{-1}_{1/2}$ (2011Ko08,1989Br22).
156.70+x *10*	(6^-)		configuration: $\pi h_{11/2}\nu d^{-1}_{5/2}$ (2011Ko08).
361.87+x *13*	(7^-)		configuration: $\pi h_{11/2}\nu d^{-1}_{3/2}$ (2011Ko08,1989Br22).
779.57+x *16*	(10^+)	1.20 ms *3*	E(level): the value is not known exactly relative to ground state (930 keV *110* higher g.s. (from systematics, 2012Au07)). configuration: $\pi h_{11/2}\nu h^{-1}_{11/2}$ (1989Br22). $T_{1/2}$: weighted average of 1.18 ms *2* (1989Br22) and 1.24 ms *3* (2011Ko08).

† From 'Adopted Levels'.

‡ From systematics of N=81 isotones (2011Ko08,1989Br22).

$\gamma(^{146}Tb)$

E_γ†	I_γ†&	E_i(level)	J^π_i	E_f	J^π_f	Mult.	δ	α@	Comments
(18.7 *5*)	2.1 *1*	18.73+x	$(5^-,6^-)$	0.0+x	5^-	[M1]#		48 *4*	α(L)=37 *4*; α(M)=8.2 *7* α(N)=1.89 *16*; α(O)=0.290 *25*; α(P)=0.0189 *16* I_γ: from intensity balance at the level and [M1] mult.
138.0 *5*	1.5 *8*	156.70+x	(6^-)	18.73+x	$(5^-,6^-)$	M1#		0.878 *16*	α(K)=0.741 *13*; α(L)=0.1075 *19*; α(M)=0.0235 *4* α(N)=0.00543 *10*; α(O)=0.000836 *15*; α(P)=5.51×10^{-5} *10*
156.7 *2*	5.0 *8*	156.70+x	(6^-)	0.0+x	5^-	M1#		0.614	α(K)=0.518 *8*; α(L)=0.0751 *11*; α(M)=0.01640 *24* α(N)=0.00379 *6*; α(O)=0.000584 *9*; α(P)=3.85×10^{-5} *6*
205.2 *2*	7.6 *9*	361.87+x	(7^-)	156.70+x	(6^-)	M1#		0.291	α(K)=0.245 *4*; α(L)=0.0354 *5*; α(M)=0.00772 *11* α(N)=0.00178 *3*; α(O)=0.000275 *4*; α(P)=1.82×10^{-5} *3*
343.1 *1*	91 *4*	361.87+x	(7^-)	18.73+x	$(5^-,6^-)$	E2(+M1)‡	1.6 *6*	0.050 *7*	α(K)exp=0.040 *8*;

Continued on next page (footnotes at end of table)

^{146}Tb IT decay 1989Br22,1984Br07,2011Ko08 (continued)

$\gamma(^{146}Tb)$ (continued)

E_γ [†]	I_γ [†&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α [@]	Comments
								α(L+...)exp=0.008 *2*; K/(L+M+N)+O+P=5.0 *16* (2011Ko08) α(K)=0.040 *7*; α(L)=0.0077 *4*; α(M)=0.00173 *6* α(N)=0.000395 *15*; α(O)=5.8×10^{-5} *4*; α(P)=2.8×10^{-6} *6* Mult.: experimental data do not exclude the pure E2 mult. δ: calculation with BriccMixing from α(exp)′s (2011Ko08). δ^2=2.8 +∞−*19* (2011Ko08).
417.7 *1*	100.0 *30*	779.57+x	(10$^+$)	361.87+x	(7$^-$)	E3[‡]	0.0757	α(K)exp=0.047 *9*; α(L+...)exp=0.026 *7*; K/(L+M+N)+O+P=1.9 *5* (2011Ko08) α(K)=0.0513 *8*; α(L)=0.0188 *3*; α(M)=0.00442 *7* α(N)=0.001005 *15*; α(O)=0.0001387 *20*; α(P)=3.67×10^{-6} *6*

† From 1989Br22.
‡ From α_{exp} in ce measurements (2011Ko08).
# From 1989Br22: assumed transition multipolarities for levels of multiplet structure and excellence intensity balance throughout the scheme.
@ Additional information 2.
& Absolute intensity per 100 decays.

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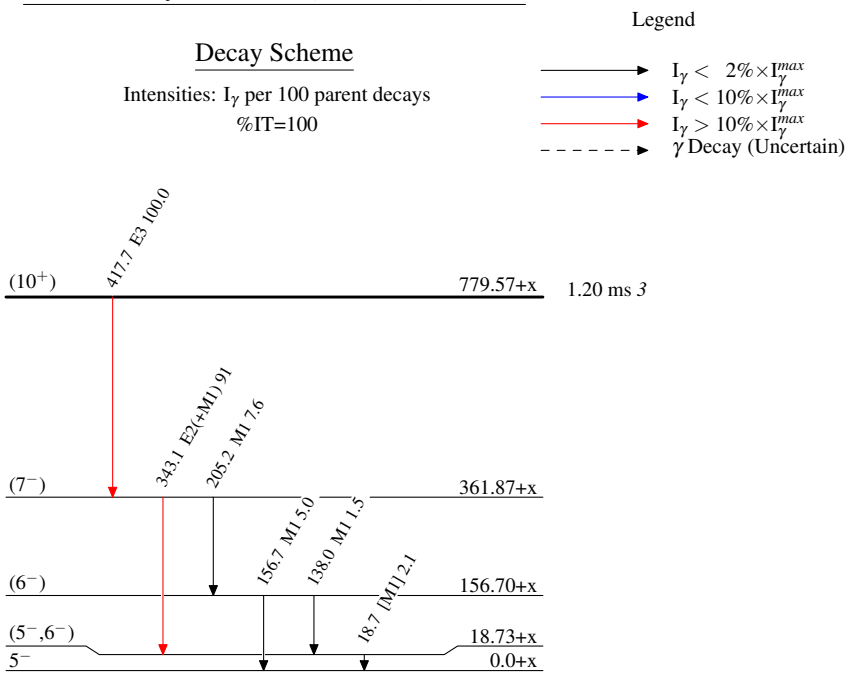
Decay Scheme

Intensities: I_γ per 100 parent decays

%IT=100



$^{146}_{65}Tb_{81}$