Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Lalkovski, F. G. Kondev	NDS 124, 157 (2015)	1-Aug-2014

Q(β^-)=10374 *11*; S(n)=4304 *12*; S(p)=12606 *14*; Q(α)=−8134 *10* 2012Wa38

^{112}Tc Levels

Cross Reference (XREF) Flags

A ^{112}Tc IT decay
B ^{238}U(p,X),^{136}Xe(^{9}Be,X)

E(level)†	J$^\pi$	T$_{1/2}$	XREF	Comments
0	(2$^+$)	271 ms *15*	AB	%β^-=100; %β^-n=1.5 *2* (1999Wa09) %β^-n: Other: 4 *1* (2009Pe06) and 2.6 *5* (1996Me09); calculated value of 0.9 in (2003Mo09). J$^\pi$: Significant direct feeding to 2$^+$ levels in ^{112}Ru, following ^{112}Tc β^- decay could be misleading given that the decay scheme is incomplete (pandemonium); expected configuration from systematics. The proposed assignment is tentative. T$_{1/2}$: Weighted average of 290 ms *20* (2009Pe09), 290 ms *20* (1999Wa09), 230 ms *20* (1996Me09), and 280 ms *30* (1990Ay02). A value of ≈135 ms is calculated in 2003Mo09. configuration: $\pi 5/2^+[422]\otimes\nu 1/2^+[411]$; $K^\pi=2^+$ is favored by the Gallagher-Moszkowski rule. The assignment is tentative. It should be noted that $\nu 5/2^+[402]$ orbital is a ground state in ^{111}Ru, while the $\nu 1/2^+[411]$) one is located at 9.7 keV. The $\pi 5/2^+[422]$ orbital is assigned to the ground state of ^{111}Tc.
258.0 *10*	(3$^+$)		A	J$^\pi$: 258γ to (2$^+$); expected configuration from systematics. configuration: $\pi 5/2^+[422]\otimes\nu 1/2^+[411]$; $K^\pi=3^+$. The assignment is tentative.
350.0 *15*	(5$^+$)	150 ns *17*	A	J$^\pi$: 92γ to (3$^+$); non-observation of 350γ to (2$^+$) in 2010Br15. However, $J^\pi=4^-$ assignment cannot be unambiguously excluded. T$_{1/2}$: From 258γ(t) in 2010Br15. Others: 218 ns *+60−43* in (2012Ka36) and <500 ns using 258γ(t) in 2009Fo05. configuration: $\pi 5/2^+[422]\otimes\nu 5/2^+[402]$; $K^\pi=5^+$ is favored by the Gallagher-Moszkowski rule. The assignment is tentative.

† From Eγ. The level energies are tentative and depend on the relative placement of the two γ-rays observed in coinc. in 2010Br15.

$\gamma(^{112}Tc)$

E$_i$(level)	J$_i^\pi$	E$_\gamma$†	I$_\gamma$†	E$_f$	J$_f^\pi$	Mult.	α‡	Comments
258.0	(3$^+$)	258 *1*	100	0	(2$^+$)			
350.0	(5$^+$)	92 *1*	100	258.0	(3$^+$)	[E2]	1.69 *8*	α(K)=1.34 *6*; α(L)=0.292 *15*; α(M)=0.054 *3* α(N)=0.0079 *4*; α(O)=0.000238 *10* B(E2)(W.u.)=6.6 *8*

† From 2010Br15. The relative placement of the two transitions in the cascade is tentative.
‡ Additional information 1.

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Level Scheme

Intensities: Type not specified