^{112}Tc β^- decay 1990Ay02

History

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

Parent: ^{112}Tc: E=0.0; $J^\pi=(2^+)$; $T_{1/2}$=271 ms *15*; Q(β^-)=10374 *11*; %β^- decay=100.0

1990Ay02: Facility: IGISOL at Jyvaskyla; Source: mass separated from ^{238}U(p,F); Beam: E(p)=20 MeV, Ic= 1$\mu\alpha$; Target: 10-20 mg/cm^2 natural uranium; Detectors: two intrinsic Ge, one planar Ge, one surface barrier ΔE detector, one plastic NE102 E-detector, ELLI detector comprising magnetic transport system, Si(Li); Measured: Eγ, Iγ, Ice, $\beta\gamma$, $\gamma\gamma$; Deduced: ^{112}Ru level scheme; Also from the same team: 1991Jo11, 1988AyZZ.

Others: 2009Pe06.

^{112}Ru Levels

E(level)†	J^π‡	$T_{1/2}$‡
0.0	0^+	1.75 s *7*
236.64 *17*	2^+	
523.56 *17*	2^+	
644.9 *3*	4^+	
747.6 *4*	3^+	
1026.6 *5*		
1179.3 *6*		

† From a least-squares fit to Eγ.
‡ From the Adopted Levels.

γ(^{112}Ru)

Iγ normalization: from Ti(236.8γ)+Ti(523.5γ)≤100. The decay scheme is incomplete (pandemonium) and no log *ft* values are given. The Iγ normalization is an upper limit.

E$_\gamma$‡	I$_\gamma$‡#	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.	α†	Comments
152.7 *2*	6 *3*	1179.3		1026.6				
224.0 *2*	8 *3*	747.6	3^+	523.56	2^+	[M1+E2]	0.054 *20*	α(K)=0.047 *16*; α(L)=0.006 *3*; α(M)=0.0012 *5*; α(N+..)=0.00019 *8* α(N)=0.00018 *8*; α(O)=7.9×10^{-6} *23* E$_\gamma$: From adopted gammas. Eγ=223.5 keV *5* in 1990Ay02.
236.8 *2*	100	236.64	2^+	0.0	0^+	E2	0.0602	α(K)=0.0513 *8*; α(L)=0.00728 *11*; α(M)=0.001346 *20*; α(N+..)=0.000219 *4* α(N)=0.000211 *3*; α(O)=8.41×10^{-6} *12* Mult.: From ce measurements in 1990Ay02.
287.0 *2*	33 *4*	523.56	2^+	236.64	2^+	M1+E2	0.025 *7*	α(K)=0.021 *6*; α(L)=0.0028 *9*; α(M)=0.00051 *17*; α(N+..)=8.E−5 *3* α(N)=8.1×10^{-5} *25*; α(O)=3.7×10^{-6} *8* Mult.: From ce measurements in 1990Ay02.
381.7 *5*	9 *4*	1026.6		644.9	4^+			
408.2 *2*	15 *5*	644.9	4^+	236.64	2^+	[E2]	0.00988	α(K)=0.00856 *12*; α(L)=0.001086 *16*; α(M)=0.000200 *3*; α(N+..)=3.32×10^{-5} *5* α(N)=3.18×10^{-5} *5*; α(O)=1.472×10^{-6} *21*
432.0 *10*		1179.3		747.6	3^+			
510.8 *2*	21 *9*	747.6	3^+	236.64	2^+	[M1+E2]	0.0047 *3*	α(K)=0.00411 *25*; α(L)=0.00049 *5*; α(M)=9.0×10^{-5} *9*; α(N+..)=1.52×10^{-5} *13*

Continued on next page (footnotes at end of table)

^{112}Tc β^- decay 1990Ay02 (continued)

$\gamma(^{112}Ru)$ (continued)

E_γ [‡]	I_γ [‡#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α [†]	Comments
								α(N)=1.45×10^{-5} *13*; α(O)=7.3×10^{-7} *3* E_γ,I_γ: From adopted gammas. Eγ=511.5 keV *5* and Iγ=7 *7* in 1990Ay02.
523.4 *2*	24 *5*	523.56	2$^+$	0.0	0$^+$	[E2]	0.00467	α(K)=0.00407 *6*; α(L)=0.000499 *7*; α(M)=9.16×10^{-5} *13*; α(N+..)=1.536×10^{-5} *22* α(N)=1.465×10^{-5} *21*; α(O)=7.10×10^{-7} *10*

† Additional information 1.
‡ From 1990Ay02, unless otherwise stated. $\Delta E\gamma$ estimated by the evaluators (1996De55) after discussion with the authors.
# For absolute intensity per 100 decays, multiply by ≤0.799.

^{112}Tc β^- decay 1990Ay02

Decay Scheme

Intensities: Relative I_γ