^{112}In IT decay (20.67 min) 1983Ry06,1962Ru05,1953Bl44

History

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

Parent: ^{112}In: E=156.61 *3*; $J^\pi=4^+$; $T_{1/2}$=20.67 min *8*; %IT decay=100.0

1983Ry06: Facility: SAMES accelerator at NPL-Teddington; Source: from ^{113}In(n,2nγ). E(n)=14 MeV from a (d,t) reaction on Ti-T target; Detectors: one coaxial Ge, one gas-flow proportional counter; Measured: γ, ce, Eγ, Iγ, α(K)exp, α(L)exp; Deduced: level scheme, MULT., J^π, t, $\sigma(^{112}In)/\sigma(^{112m}In)$.

1962Ru05: Facility: cyclotron accelerator at Osaka; Sources: from ^{113}In(γ,n), ^{112}Cd(d,2n), ^{109}Ag(α,n); Detectors: β-spectrometer, one NaI(Tl); Measured: γ, ce, Eγ, Iγ, α(K)exp; Deduced: level scheme, γ-ray Mult., J^π, $T_{1/2}$.

1953Bl44: Source: chemically separated from ^{109}Ag(α,n); Detectors: double-coil lens spectrometer, 180^0 spectrometer; Measured: β(t) Ce(t); Deduced: α(K)exp, K/LM, ^{112}In level scheme, γ-ray Mult., J^π, $T_{1/2}$.

Others: 1973FrYM, 1968Ko25, 1968Ro03, 1947Te04, 1942Sm10, 1940La07, 1939Ba03, 1937La05; Also, R.K.Girgis and R.Van Lieshout in Physica 25 (1959) 597.

^{112}In Levels

E(level)[†]	J^π[‡]	$T_{1/2}$	Comments
0.0	1^+	14.88 min *15*	$T_{1/2}$: weighted mean of 14.97 min *10* (1983Ry06), 14.5 min *1* (1953Bl44), 14.4 min *4* (1965Fu07), 15.2 min *1* (1980Ad04), 14.5 min *6* (1968Ro03); Other: 13.8 min (1974Ku10).
156.61 *3*	4^+	20.67 min *8*	$T_{1/2}$: weighted average of 20.56 min *6* (1983Ry06), 20.7 min *3* (1953Bl44), 21.0 min *5* (1962Ru05), 20.9 min *2* (1968Ko25), 20.9 min *1* (1980Ad04); Others: 20.7 min (1974Ku10) and 20.4 min *4* (1968Ro03).

[†] From Eγ.
[‡] From the Adopted Levels.

$\gamma(^{112}In)$

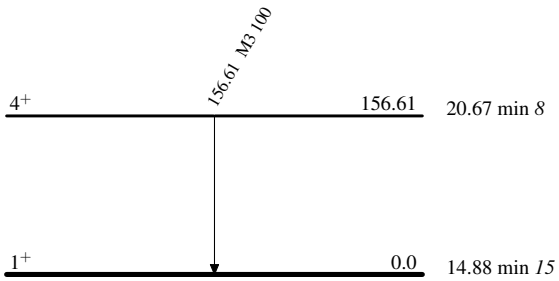
E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.	α[#]	Comments
156.61	4^+	156.61 *3*	100	0.0	1^+	M3	6.50	α(K)=5.00 *7*; α(L)=1.208 *17*; α(M)=0.249 *4*; α(N+..)=0.0473 *7* α(N)=0.0448 *7*; α(O)=0.00254 *4* ce(N)/(γ+ce)=0.00597 *11*; ce(O)/(γ+ce)=0.000339 *7* Mult.: α(K)exp=5.8 *12* and K/LM=3.3 *7* (1962Ru05); α(K)exp=3.7 *4* (1953Bl44).

[†] From the adopted gammas.
[‡] For absolute intensity per 100 decays, multiply by 0.1333 *16*.
[#] 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.

^{112}In IT decay (20.67 min) 1983Ry06,1962Ru05,1953Bl44

Decay Scheme

Intensities: Relative photon branching from each level
%IT=100.0



$^{112}_{49}In_{63}$