^{95}Ag IT decay (<16 ms) 2003Do09

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, G. Mukherjee, A. A. Sonzogni	NDS 111, 2555 (2010)	30-Jun-2009

Parent: ^{95}Ag: E=2531.41 *19*; J^π=(23/2$^+$); $T_{1/2}$<16 ms; %IT decay=100.0

^{95}Ag isomers produced in ^{58}Ni(^{40}Ca,p2nγ) reaction at 3.94 MeV/A, and separated by GSI on-line mass separator. Measured Eγ, Iγ, $\gamma\gamma$, $\beta\gamma\gamma$ coin and lifetimes using an array of 13 Ge crystals (a Cluster of 7 crystals, a Clover of 4 crystals, a single Ge detector and a LEPS detector). The positrons were measured with a plastic scintillator.

α: Additional information 1.

^{95}Ag Levels

E(level)	J^π	$T_{1/2}$[†]
0.0	(9/2$^+$)	1.85 ms *34*
822.63 *9*	(11/2$^+$)	
936.52 *9*	(13/2$^+$)	
1939.79 *14*	(15/2$^+$)	
2103.60 *17*	(17/2$^-$)	
2531.41 *19*	(23/2$^+$)	<16 ms

[†] Deduced from intensity distribution of γ-ray versus time as measured in grow-in mode.

γ(^{95}Ag)

Iγ normalization: From Σ (Iγ+ce) =100 to g.s..

E$_\gamma$	I$_\gamma$[†]	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.	α	Comments
163.8 *1*	106 *11*	2103.60	(17/2$^-$)	1939.79	(15/2$^+$)	(E1)	0.0391	ce(K)/(γ+ce)=0.0328 *5*; ce(L)/(γ+ce)=0.00393 *6*; ce(M)/(γ+ce)=0.000741 *11*; ce(N)/(γ+ce)=0.0001267 *18* ce(O)/(γ+ce)=5.42×10^{-6} *8* α(K)=0.0341 *5*; α(L)=0.00408 *6*; α(M)=0.000770 *11*; α(N)=0.0001317 *19*; α(O)=5.63×10^{-6} *8* α(N+..)=0.0001373 *20* Mult.: expected from shell-model; also, because Iγ(163.8) is very similar to Iγ(427.8), transition can only be dipole.
427.8 *1*	115 *8*	2531.41	(23/2$^+$)	2103.60	(17/2$^-$)	(E3)	0.0311	ce(K)/(γ+ce)=0.0249 *4*; ce(L)/(γ+ce)=0.00423 *6*; ce(M)/(γ+ce)=0.000822 *12*; ce(N)/(γ+ce)=0.0001372 *20* ce(O)/(γ+ce)=4.33×10^{-6} *6* α(K)=0.0257 *4*; α(L)=0.00437 *7*; α(M)=0.000847 *12*; α(N)=0.0001415 *20*; α(O)=4.47×10^{-6} *7* α(N+..)=0.0001459 *21* Mult.: expected from shell-model, supported by a reasonable value of B(E3)(W.u.)>0.052.
822.6 *1*	36 *8*	822.63	(11/2$^+$)	0.0	(9/2$^+$)	(M1+E2)	0.00179 *11*	α(K)=0.00157 *10*; α(L)=0.000186 *9*; α(M)=3.53×10^{-5} *16*; α(N)=6.1×10^{-6} *3*;

Continued on next page (footnotes at end of table)

^{95}Ag IT decay (<16 ms) 2003Do09 (continued)

γ(^{95}Ag) (continued)

E_γ	I_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α	Comments
								α(O)=2.85×10^{-7} *22* α(N+..)=6.4×10^{-6} *4* Mult.: M1+E2 assignment according to shell-model calculations.
936.5 *1*	80 *9*	936.52	(13/2$^+$)	0.0	(9/2$^+$)	(E2)	0.001244 *18*	α=0.001244 *18*; α(K)=0.001085 *16*; α(L)=0.0001300 *19*; α(M)=2.46×10^{-5} *4* α(N)=4.25×10^{-6} *6*; α(O)=1.95×10^{-7} *3*; α(N+..)=4.45×10^{-6} Mult.: E2 assignment according to shell-model calculations.
1003.2 *1*	70 *8*	1939.79	(15/2$^+$)	936.52	(13/2$^+$)	(M1+E2)	0.00114 *8*	α(K)=0.00100 *7*; α(L)=0.000117 *7*; α(M)=2.22×10^{-5} *13*; α(N)=3.85×10^{-6} *24*; α(O)=1.81×10^{-7} *15* α(N+..)=4.03×10^{-6} *25* Mult.: M1+E2 assignment according to shell-model calculations.
1117.1 *1*	40 *10*	1939.79	(15/2$^+$)	822.63	(11/2$^+$)	(E2)	0.000841 *12*	α=0.000841 *12*; α(K)=0.000734 *11*; α(L)=8.67×10^{-5} *13*; α(M)=1.642×10^{-5} *23* α(N)=2.84×10^{-6} *4*; α(O)=1.322×10^{-7} *19*; α(N+..)=3.91×10^{-6} Mult.: E2 assignment according to shell-model calculations.

[†] For absolute intensity per 100 decays, multiply by 0.86 *9*.

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Decay Scheme

Intensities: Relative I_γ

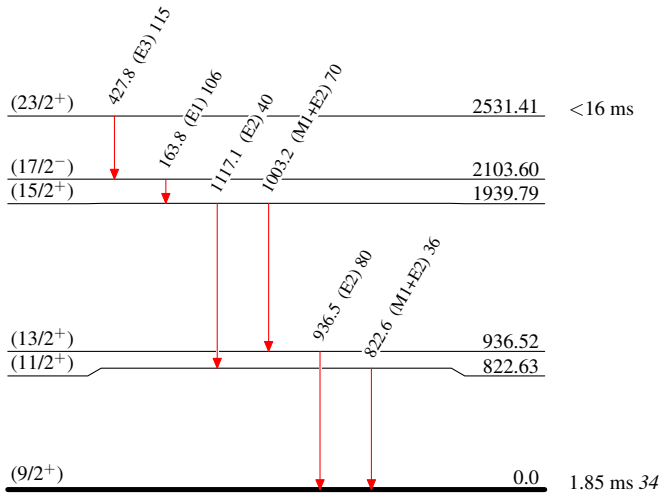
%IT=100.0

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{95}_{47}Ag_{48}$