^{95}Ag IT decay (<40 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=4860.03 *24*; J^π=(37/2$^+$); $T_{1/2}$<40 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 s *34*
822.60 *9*	(11/2$^+$)	
936.51 *9*	(13/2$^+$)	
1939.71 *10*	(15/2$^+$)	
2103.51 *14*	(17/2$^-$)	
2531.31 *17*	(23/2$^+$)	<16 ms
2690.11 *20*	(25/2$^+$)	
3984.62 *22*	(29/2$^+$)	
4860.03 *24*	(37/2$^+$)	<40 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
158.8 *1*	60 *10*	2690.11	(25/2$^+$)	2531.31	(23/2$^+$)	(M1+E2)	0.20 *9*	ce(K)/(γ+ce)=0.14 *5*; ce(L)/(γ+ce)=0.023 *12*; ce(M)/(γ+ce)=0.0043 *24*; ce(N)/(γ+ce)=0.0007 *4*; ce(O)/(γ+ce)=2.3×10^{-5} *7* α(K)=0.16 *7*; α(L)=0.027 *15*; α(M)=0.005 *3*; α(N)=0.0009 *5*; α(O)=2.7×10^{-5} *9*; α(N+..)=0.0009 *5* Mult.: expected from shell-model; also, because Iγ(158.8) is about 73 % of Iγ(1294.5), transition can only be dipole or E2.
163.8 *1*	106 *11*	2103.51	(17/2$^-$)	1939.71	(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*	2531.31	(23/2$^+$)	2103.51	(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*;

Continued on next page (footnotes at end of table)

^{95}Ag IT decay (<40 ms) 2003Do09 (continued)

$\gamma(^{95}Ag)$ (continued)

E_γ	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α	Comments
								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*	822.60	(11/2$^+$)	0.0	(9/2$^+$)			Mult.: M1+E2 assignment according to shell-model calculations.
875.4 *1*	76 *7*	4860.03	(37/2$^+$)	3984.62	(29/2$^+$)	(E4)	0.00678 *10*	α(K)=0.00574 *8*; α(L)=0.000847 *12*; α(M)=0.0001633 *23*; α(N)=2.77×10^{-5} *4* α(O)=1.067×10^{-6} *15*; α(N+..)=2.88×10^{-5} *4* Mult.: expected from shell-model, supported by a reasonable value of B(E4)(W.u.)>28.
936.5 *1*	80 *9*	936.51	(13/2$^+$)	0.0	(9/2$^+$)			Mult.: E2 assignment according to shell-model calculations.
1003.2 *1*	70 *8*	1939.71	(15/2$^+$)	936.51	(13/2$^+$)			Mult.: M1+E2 assignment according to shell-model calculations.
1117.1 *1*	40 *10*	1939.71	(15/2$^+$)	822.60	(11/2$^+$)			Mult.: E2 assignment according to shell-model calculations.
1294.5 *1*	82 *7*	3984.62	(29/2$^+$)	2690.11	(25/2$^+$)			Mult.: E2 from shell-model calculation.

† For absolute intensity per 100 decays, multiply by 0.82 *9*.

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Decay Scheme

Intensities: Relative I_γ

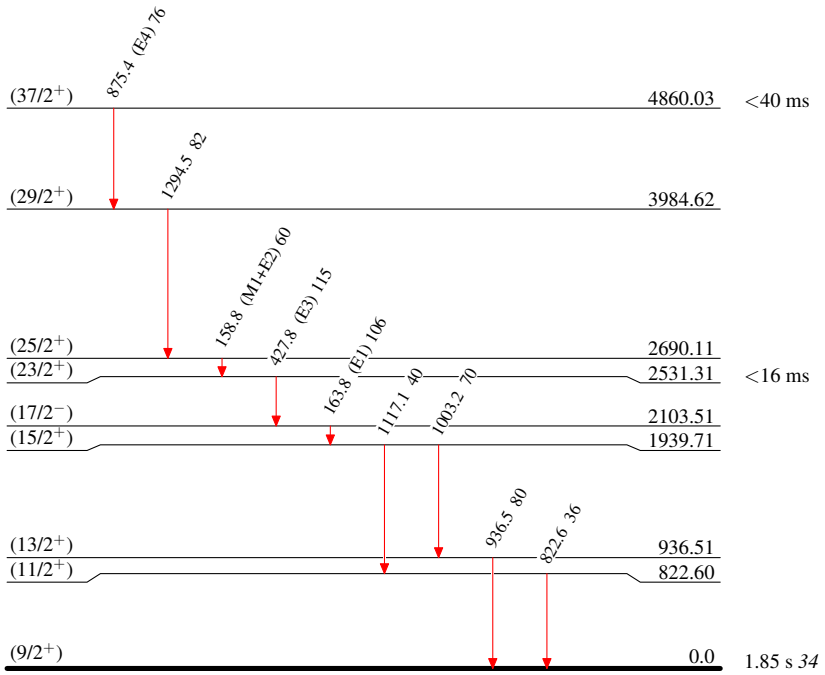
%IT=100.0

Legend

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

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

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



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