^{126}Ag β^- decay (52 ms) 2014Ba18,2005Ka45

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	H. Iimura, J. Katakura, S. Ohya	NDS 180, 1 (2022)	1-Oct-2021

Parent: ^{126}Ag: E=0+x; J^π=(3$^+$); $T_{1/2}$=52 ms *10*; Q(β^-)=11540 *SY*; %β^- decay=100.0

^{126}Ag-Q(β^-): 11540 200 (systematics,2021Wa16).

2014Ba18, 2012Ba62: ^{126}Ag produced in ^{238}U(p,F) at beam energy of E(p)=50 MeV at hribf-ORNL. Measured Eγ, Iγ, $\gamma\gamma$, eγ, γ(t).

2005KA45: ^{238}U(p,F), ISOLDE-CERN, laser ion source, measured Eγ, Iγ, $\gamma\gamma$.

2000KA48,1998KAZM,1998KRZW: ^{238}U(p,F), ISOLDE-CERN, laser ion source, measured $\gamma\gamma$, $\beta\gamma$.

Decay scheme is that proposed by 2014BA18.

^{126}Cd Levels

E(level)‡	J^π†	$T_{1/2}$	Comments
0.0	0$^+$	0.514 s *8*	$T_{1/2}$: from Adopted Levels, gammas.
651.96 *10*	(2$^+$)		
1466.86 *23*	(4$^+$)		
1579.17 *17*	(2$^+$)		
1734.7 *4*			J^π: 2014Ba18 proposed spin-parity of (0$^+$,4$^+$).
1802.7 *4*			J^π: 2014Ba18 proposed spin-parity of (0$^+$,4$^+$).
1868.5?	(5$^-$)		
1943.56 *24*			J^π: 2014Ba18 proposed spin-parity of (3$^+$).
2206.3 *3*			
2468.9 *4*			
2545.1 *5*			
2661.5 *3*			
2695.3?			
2835.38 *23*			
2878.8 *5*			
3386.1 *5*			
3605.1 *6*			

† From Adopted Levels.

‡ From a least-squares fit to E(γ's).

β^- radiations

E(decay)	E(level)	Iβ^-†‡	Comments
(7934 *SY*)	3605.1	1.8 *11*	
(8153 *SY*)	3386.1	2.4 *9*	
(8661 *SY*)	2878.8	2.2 *11*	
(8704 *SY*)	2835.38	21 *2*	
(8878 *SY*)	2661.5	14 *3*	
(8994 *SY*)	2545.1	4.2 *12*	
(9071 *SY*)	2468.9	5.5 *12*	
(9333 *SY*)	2206.3	6.8 *13*	
(9596 *SY*)	1943.56	22 *3*	Iβ^-: 2 *3* in 2014Ba18 is inconsistent with the author's Iγ. The Iγ barance at this level gives Iβ^-=22.
(9737 *SY*)	1802.7	3.7 *9*	
(9805 *SY*)	1734.7	4.6 *12*	
(9960 *SY*)	1579.17	5 *4*	
(10888 *SY*)	651.96	7 *6*	Iβ^-: 15 *7* in 2014Ba18 is inconsistent with the authors' Iγ. The Iγ barance at this level gives Iβ^-=7.

Continued on next page (footnotes at end of table)

^{126}Ag β^- decay (52 ms) 2014Ba18,2005Ka45 (continued)

β^- radiations (continued)

† From intensity balance at each level.
‡ Absolute intensity per 100 decays.

$\gamma(^{126}Cd)$

Iγ normalization: Assuming no β feeding to g.s.

E_γ †	I_γ †‡	E_i(level)	J_i^π	E_f	J_f^π	Comments
262.8 *3*	1.7 *4*	2206.3		1943.56		
364.5 *4*	5 *1*	1943.56		1579.17	(2^+)	
651.9 *1*	45 *2*	651.96	(2^+)	0.0	0^+	
814.9 *2*	1.1 *4*	1466.86	(4^+)	651.96	(2^+)	
826.8@ *3*	3.4 *5*	2695.3?		1868.5?	(5^-)	2014Ba18 placed the 827 keV γ as the transition from 2695 keV level to 1869 keV level in low spin ^{126}Ag decay, but no γ is reported from 1868 keV level. The placement of the 827 keV γ is uncertain.
927.1 *2*	12.4 *8*	1579.17	(2^+)	651.96	(2^+)	
1082.7# *3*	2.1# *5*	1734.7		651.96	(2^+)	
1082.7# *4*	5# *1*	2661.5		1579.17	(2^+)	
1150.7 *3*	1.7 *4*	1802.7		651.96	(2^+)	
1291.6 *3*	6.8 *7*	1943.56		651.96	(2^+)	
1554.2 *4*	1.4 *4*	2206.3		651.96	(2^+)	
1579.7 *3*	0.63 *7*	1579.17	(2^+)	0.0	0^+	
1816.9 *3*	2.5 *5*	2468.9		651.96	(2^+)	
1893.1 *4*	1.9 *5*	2545.1		651.96	(2^+)	
1919.2 *4*	1.1 *4*	3386.1		1466.86	(4^+)	
2009.1 *4*	1.5 *4*	2661.5		651.96	(2^+)	
2025.9 *5*	0.8 *5*	3605.1		1579.17	(2^+)	
2183.4 *2*	9.5 *8*	2835.38		651.96	(2^+)	
2226.8 *5*	1.0 *5*	2878.8		651.96	(2^+)	

† From 2014Ba18.
‡ For absolute intensity per 100 decays, multiply by 2.19 *10*.
# Multiply placed with intensity suitably divided.
@ Placement of transition in the level scheme is uncertain.

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Decay Scheme

Intensities: I_γ per 100 parent decays
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)