^{95}Ag ε decay 2005Ha45

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=0.0; J^π=(9/2$^+$); $T_{1/2}$=1.74 s *13*; Q(ε)=9865 *SY*; %ε+%$β^+$ decay=100.0

^{95}Ag-Q(ε): Qβ-=9865 *401* (systematics value from 2009AuZZ).

^{95}Ag isotope produced in ^{58}Ni(^{40}Ca,p2n) reaction at E=3.9 MeV/nucleon. Reaction products stopped in hot C catcher inside a FEBIAD-B2C ion source. Mass separation. Measured Eγ, Iγ, γγ, β-γ coin, β-γ(t) coin with 13 Ge crystals in close geometry (one CLUSTER, one CLOVER, one 60% single HPGe and a LEPS).

^{95}Pd Levels

E(level)†	J^π‡	Comments
0.0	9/2$^+$	
1261.80 *8*	11/2$^+$	
1351.12 *9*	13/2$^+$	E(level): existence of level confirmed from (89γ)(1262γ) coin.
1686.00 *8*	(7/2$^+$,9/2$^+$,11/2$^+$)#	
1800.78 *10*	(7/2$^+$,9/2$^+$,11/2$^+$)#	
1973.02 *22*	15/2$^+$	
2024.93 *9*		
2266.80 *22*		
2283.50 *15*		
2405.94 *16*		
2488.06 *15*		
2570.78 *15*	(7/2$^+$,9/2$^+$,11/2$^+$)#	
2700.67 *15*		
2733.5 *3*		
2940.18 *15*		
3408.9 *3*		

† From least-squares fit to Eγ′s.

‡ Adopted from 2003Ma24, unless stated otherwise.

From their strong γ deexcitation to 9/2$^+$ ground state of ^{95}Pd (2005Ha45).

ε,$β^+$ radiations

E(decay)	E(level)	Iβ$^+$ #	Iε†#	Log *ft*‡	I(ε+$β^+$)#	Comments
(6456 *SY*)	3408.9	1.19 *19*	0.032 *9*	5.65 *17*	1.22 *19*	av Eβ=2.49×10^3 *20*; εK=0.023 *6*; εL=0.0028 *7*; εM+=0.00068 *17*
(6924 *SY*)	2940.18	3.3 *3*	0.070 *17*	5.37 *15*	3.4 *3*	av Eβ=2.71×10^3 *20*; εK=0.018 *4*; εL=0.0022 *5*; εM+=0.00054 *13*
(7131 *SY*)	2733.5	0.88 *17*	0.017 *5*	6.01 *17*	0.90 *17*	av Eβ=2.81×10^3 *20*; εK=0.016 *4*; εL=0.0020 *5*; εM+=0.00048 *11*
(7164 *SY*)	2700.67	4.3 *3*	0.081 *18*	5.34 *15*	4.4 *3*	av Eβ=2.83×10^3 *20*; εK=0.016 *4*; εL=0.0020 *5*; εM+=0.00048 *11*
(7294 *SY*)	2570.78	13.9 *7*	0.24 *5*	4.87 *14*	14.1 *7*	av Eβ=2.89×10^3 *20*; εK=0.015 *4*; εL=0.0019 *4*; εM+=0.00045 *10*
(7376 *SY*)	2488.06	1.88 *22*	0.032 *8*	5.77 *15*	1.91 *22*	av Eβ=2.93×10^3 *20*; εK=0.014 *3*; εL=0.0018 *4*; εM+=0.00043 *9*
(7459 *SY*)	2405.94	1.26 *16*	0.021 *5*	5.97 *15*	1.28 *16*	av Eβ=2.97×10^3 *20*; εK=0.014 *3*; εL=0.0017 *4*; εM+=0.00042 *9*
(7581 *SY*)	2283.50	3.8 *4*	0.059 *13*	5.52 *14*	3.9 *4*	av Eβ=3.03×10^3 *20*; εK=0.013 *3*; εL=0.0016 *4*; εM+=0.00039 *8*

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^{95}Ag ε decay 2005Ha45 (continued)

ε,β+ radiations (continued)

E(decay)	E(level)	Iβ+ #	Iε†#	Log ft‡	I(ε+β+)#	Comments
(7598 *SY*)	2266.80	1.30 *17*	0.020 *5*	6.00 *15*	1.32 *17*	av Eβ=3.04×10^3 *20*; εK=0.013 *3*; εL=0.0016 *4*; εM+=0.00039 *8*
(7840 *SY*)	2024.93	6.0 *7*	0.083 *19*	5.41 *14*	6.1 *7*	av Eβ=3.16×10^3 *20*; εK=0.0117 *23*; εL=0.0015 *3*; εM+=0.00035 *7*
(7891 *SY*)	1973.02	1.08 *17*	0.014 *4*	6.17 *15*	1.09 *17*	av Eβ=3.18×10^3 *20*; εK=0.0115 *22*; εL=0.0014 *3*; εM+=0.00034 *7*
(8064 *SY*)	1800.78	4.8 *4*	0.060 *12*	5.57 *13*	4.9 *4*	av Eβ=3.27×10^3 *20*; εK=0.0107 *20*; εL=0.00132 *25*; εM+=0.00032 *6*
(8179 *SY*)	1686.00	5.5 *10*	0.066 *17*	5.54 *15*	5.6 *10*	av Eβ=3.32×10^3 *20*; εK=0.0102 *19*; εL=0.00126 *24*; εM+=0.00031 *6*
(8603 *SY*)	1261.80	12.2 *12*	0.122 *24*	5.32 *13*	12.3 *12*	av Eβ=3.53×10^3 *20*; εK=0.0086 *15*; εL=0.00107 *19*; εM+=0.00026 *5*
(9865 *SY*)	0.0	≈25	≈0.16	≈5.3	≈25	av Eβ=4.15×10^3 *20*; εK=0.0055 *8*; εL=0.00068 *10*; εM+=0.000164 *24*

† From γ intensity balance, assuming I(ε+βp) to g.s.≈25; as a result, these values are all approximate.
‡ Approximate values from Iε.
# Absolute intensity per 100 decays.

γ(^{95}Pd)

Iγ normalization: From Σ(Iγ to g.s.)=75, by assuming g.s. to g.s. ε+β+ branch equal to 25 %.

Eγ	Iγ†#	Ei(level)	J_i^π	Ef	J_f^π	Comments
89.3@ *7*	1.6 *9*	1351.12	13/2+	1261.80	11/2+	Eγ,Iγ: uncertain because of nonlinear energy response of the spectrum below 100 keV and a possible intensity contribution from neighboring 87.3 keV Pb x-ray.
x488						
539.0 *1*	13.9 *11*	1800.78	(7/2+,9/2+,11/2+)	1261.80	11/2+	
580.8 *2*	6.3 *8*	2266.80		1686.00	(7/2+,9/2+,11/2+)	
597.5 *2*	3.8 *11*	2283.50		1686.00	(7/2+,9/2+,11/2+)	
605.1@ *2*	3.8 *6*	2405.94		1800.78	(7/2+,9/2+,11/2+)	
621.9 *2*	5.2 *8*	1973.02	15/2+	1351.12	13/2+	
675.7 *2*	12 *1*	2700.67		2024.93		
720.0 *2*	2.3 *5*	2405.94		1686.00	(7/2+,9/2+,11/2+)	
760.5@		2733.5		1973.02	15/2+	Eγ: from figure 3 of 2005Ha45; not listed in authors′ table I.
763.1 *2*	3.1 *6*	2024.93		1261.80	11/2+	
802.1 *2*	5.7 *8*	2488.06		1686.00	(7/2+,9/2+,11/2+)	
1014.7 *2*	9.1 *11*	2700.67		1686.00	(7/2+,9/2+,11/2+)	
1021.7 *2*	14.9 *13*	2283.50		1261.80	11/2+	
1219.6 *2*	58 *3*	2570.78	(7/2+,9/2+,11/2+)	1351.12	13/2+	
1226.2 *2*	3.4 *7*	2488.06		1261.80	11/2+	
1254.1 *2*	5.9 *9*	2940.18		1686.00	(7/2+,9/2+,11/2+)	
1261.8 *1*	100 *5*	1261.80	11/2+	0.0	9/2+	
1351.1 *1*	121 *7*	1351.12	13/2+	0.0	9/2+	Iγ: summed intensity for the doublet: one from ^{95}Ag decay to ^{95}Pd and the second from ^{95}Pd decay to ^{95}Rh.

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^{95}Ag ε decay 2005Ha45 (continued)

γ(^{95}Pd) (continued)

E_γ	I_γ[†#]	E_i(level)	J_i^π	E_f	J_f^π
1384.0 *3*	5.8 *9*	3408.9		2024.93	
[x]1423					
1471.7 *3*	4.3 *8*	2733.5		1261.80	$11/2^+$
1686.0 *1*	60 *4*	1686.00	$(7/2^+,9/2^+,11/2^+)$	0.0	$9/2^+$
1800.6[‡] *2*	13.4 *12*	1800.78	$(7/2^+,9/2^+,11/2^+)$	0.0	$9/2^+$
2024.9 *1*	44 *3*	2024.93		0.0	$9/2^+$
2570.8[‡] *2*	9.3 *11*	2570.78	$(7/2^+,9/2^+,11/2^+)$	0.0	$9/2^+$
2940.2[‡] *2*	10.2 *12*	2940.18		0.0	$9/2^+$

[†] Determined from β-γ coin spectrum. Summing corrections not taken into account.
[‡] Coin only with 511-keV annihilation radiation peak.
[#] For absolute intensity per 100 decays, multiply by 0.2096.
[@] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

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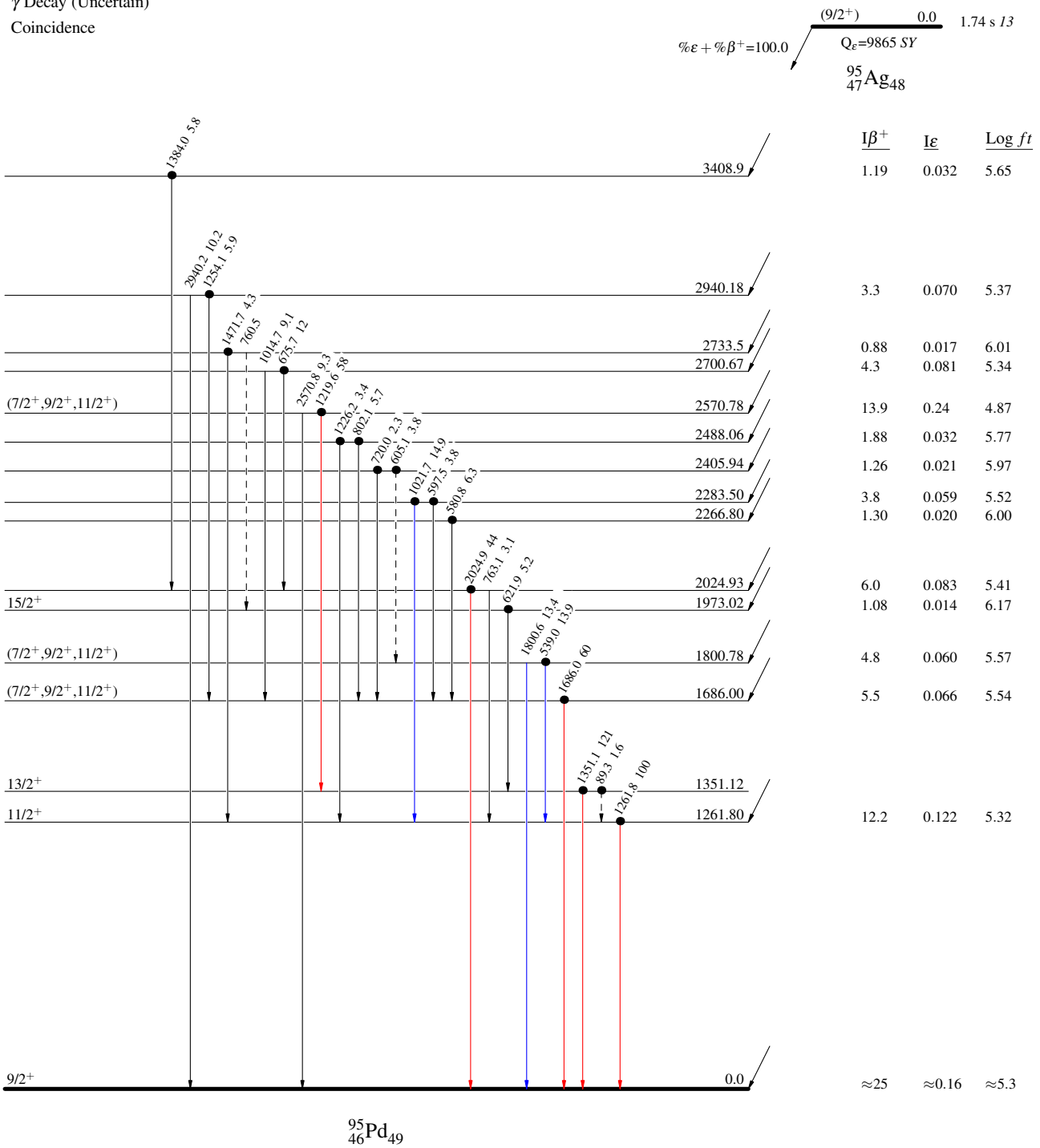
Decay Scheme

Intensities: Relative I_γ

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)
- Coincidence



	Iβ+	Iε	Log ft
3408.9	1.19	0.032	5.65
2940.18	3.3	0.070	5.37
2733.5	0.88	0.017	6.01
2700.67	4.3	0.081	5.34
2570.78	13.9	0.24	4.87
2488.06	1.88	0.032	5.77
2405.94	1.26	0.021	5.97
2283.50	3.8	0.059	5.52
2266.80	1.30	0.020	6.00
2024.93	6.0	0.083	5.41
1973.02	1.08	0.014	6.17
1800.78	4.8	0.060	5.57
1686.00	5.5	0.066	5.54
1351.12			
1261.80	12.2	0.122	5.32
0.0	≈25	≈0.16	≈5.3

$^{95}_{46}Pd_{49}$