^{106}Pd(^{63}Cu,p2nγ) 1992Si12

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109, 1103 (2008)	1-Mar-2008

1992Si12 (supersedes 1990HaZP): E(^{63}Cu)=285, 290 MeV; self-supporting foil targets. POLYTESSA array (20 Ge detectors with BGO suppression shields), θ= 101°, 117°, 143°, recoil separator; measured Eγ, Iγ, $\gamma\gamma$ coin, recoil-γ coin, DCO ratios (Iγ(40°,40°)/Iγ(40°,79°) and, from recoil-gated spectrum, Iγ(40°)/Iγ(79°)). TESSA3 array (16 Ge detectors with 50-element inner ball of BGO detectors), θ=30°, 60°, 90°, 120°, 150°; measured Eγ, Iγ, $\gamma\gamma$ coin, feeding transition DCO ratios Iγ(30°,30°)/Iγ(30°,90°). cranked shell model calculations.

^{166}W Levels

E(level)†	J^{π}‡	E(level)†	J^{π}‡	E(level)†	J^{π}‡	E(level)†	J^{π}‡
0.0#	0^+	2573.0& *19*	10^-	4389# *3*	18^+	7168?@ *4*	(25^-)
252.0# *10*	2^+	2743.5@ *21*	11^-	4870& *3*	18^-	7314# *4*	26^+
675.9# *15*	4^+	2946.4& *22*	12^-	5028# *3*	20^+	7519?& *4*	(26^-)
1225.9# *17*	6^+	3030.6# *23*	12^+	5112@ *3*	19^-	7915?@ *4*	(27^-)
1587.0@ *17*	5^-	3174.1@ *23*	13^-	5579& *3*	20^-	8186# *4*	28^+
1864.6# *18*	8^+	3356.1# *25*	14^+	5729# *4*	22^+	8290?& *4*	(28^-)
1928.1@ *17*	7^-	3474.1& *24*	14^-	5851@ *3*	21^-	8723?@ *4*	(29^-)
2019.9& *18*	6^-	3720.3@ *25*	15^-	6169& *3*	22^-	9108# *4*	30^+
2337.3@ *18*	9^-	3821# *3*	16^+	6494@ *4*	(23^-)	10077?# *4*	(32^+)
2349.2& *18*	8^-	4127& *3*	16^-	6494.1# *40*	24^+		
2550.9# *21*	10^+	4376@ *3*	17^-	6811?& *4*	(24^-)		

† From least-squares fit to Eγ, assigning an uncertainty of 1 keV to all data.
‡ Authors′ values, based on measured DCO ratios and deduced band structure.
# Band(A): yrast 0^+ g.s. band. Becomes (ν 3/2[651])^2 band At $\hbar\omega$=262 keV *4*.
@ Band(B): (ν 3/2[651])(ν 3/2[521]), α=+1/2 band. Crossed by 4 quasineutron (3/2[651])^2(3/2[521])(1/2[660]) band At $\hbar\omega$=348 keV *4*. (AE band crossed by AEBC band).
& Band(C): (ν 3/2[651])(ν 3/2[521]), α=−1/2 band. Crossed by 4 quasineutron (3/2[651])^2(3/2[521])(1/2[660]) band At $\hbar\omega$=336 keV *4*. (AF band crossed by AFBC band).

γ(^{166}W)

E_γ†	I_γ‡	E_i(level)	J^{π}_i	E_f	J^{π}_f	Mult.#	Comments
223.8	11.1 *11*	2573.0	10^-	2349.2	8^-		DCO1=0.87 *10*, DCO2=0.89 *14*, DCO3=0.74 *5*.
235.7	8.2 *8*	2573.0	10^-	2337.3	9^-	D	DCO1=0.50 *4*, DCO2=0.69 *7*, DCO3=0.80 *5*.
252.0	100.0 *16*	252.0	2^+	0.0	0^+		DCO1=0.76 *3*, DCO2=0.82 *4*, DCO3=0.83 *2*.
325.5	41.3 *16*	3356.1	14^+	3030.6	12^+	Q	DCO1=1.01 *4*, DCO2=1.01 *8*, DCO3=0.99 *3*.
329.3	6.8 *14*	2349.2	8^-	2019.9	6^-	Q	DCO1=0.90 *13*, DCO2=0.95 *16*, DCO3=1.04 *9*.
341.1	9.7 *6*	1928.1	7^-	1587.0	5^-	Q	DCO1=0.96 *10*, DCO2=0.92 *12*, DCO3=0.97 *6*.
373.4	10.9 *6*	2946.4	12^-	2573.0	10^-	Q	DCO1=0.89 *8*, DCO2=1.09 *8*, DCO3=0.90 *5*.
406.2	21.7 *12*	2743.5	11^-	2337.3	9^-	Q	DCO1=1.05 *8*, DCO2=0.93 *6*, DCO3=0.99 *4*.
409.1	26.7 *14*	2337.3	9^-	1928.1	7^-	Q	DCO1=0.86 *9*, DCO2=0.92 *5*, DCO3=0.91 *3*.
421.1	6.2 *10*	2349.2	8^-	1928.1	7^-		
423.9	100.0	675.9	4^+	252.0	2^+	Q	DCO1=0.89 *4*, DCO2=0.89 *4*, DCO3=0.89 *2*.
430.6	19.5 *11*	3174.1	13^-	2743.5	11^-	Q	DCO1=0.99 *7*, DCO2=0.93 *7*, DCO3=1.17 *6*.
432.8	3.9 *10*	2019.9	6^-	1587.0	5^-		
465.2	37.4 *15*	3821	16^+	3356.1	14^+	Q	DCO1=1.02 *4*, DCO2=1.08 *5*, DCO3=1.10 *3*.
472.7	7.1 *6*	2337.3	9^-	1864.6	8^+	D	DCO1=0.51 *6*, DCO2=0.52 *5*, DCO3=0.57 *5*.

Continued on next page (footnotes at end of table)

^{106}Pd(^{63}Cu,p2nγ) 1992Si12 (continued)

γ(^{166}W) (continued)

E_γ [†]	I_γ [‡]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [#]	Comments
479.7	41.6 *16*	3030.6	12$^+$	2550.9	10$^+$	Q	DCO1=0.90 *4*, DCO2=0.97 *4*, DCO3=1.05 *3*.
527.7	10.7 *10*	3474.1	14$^-$	2946.4	12$^-$	Q	DCO2=1.09 *14*, DCO3=1.07 *6*.
546.2	17.6 *18*	3720.3	15$^-$	3174.1	13$^-$	Q	DCO1=0.97 *9*, DCO2=0.94 *16*, DCO3=0.94 *5*.
550.0	89.3 *20*	1225.9	6$^+$	675.9	4$^+$	Q	DCO1=1.03 *4*, DCO2=1.00 *5*, DCO3=0.94 *2*.
568.0	32.0 *16*	4389	18$^+$	3821	16$^+$	Q	DCO1=0.90 *5*, DCO2=1.08 *5*, DCO3=0.99 *4*.
589.7	5.4 *16*	6169	22$^-$	5579	20$^-$	Q	DCO2=1.08 *14*, DCO3=1.24 *11*.
638.8	53 *3*	1864.6	8$^+$	1225.9	6$^+$		DCO1=1.06 *4*, DCO2=1.05 *6*, DCO3=0.95 *3*; for doublet.
638.8	24.4 *18*	5028	20$^+$	4389	18$^+$		DCO1=1.06 *4*, DCO2=1.05 *6*, DCO3=0.95 *3*; for doublet.
641.7 [@]	3.8 *16*	6811?	(24$^-$)	6169	22$^-$		
642.6	8.4 *12*	6494	(23$^-$)	5851	21$^-$		
652.7	10.4 *14*	4127	16$^-$	3474.1	14$^-$	Q	DCO1=0.95 *13*, DCO2=1.07 *17*, DCO3=1.04 *9*.
655.8	14.2 *16*	4376	17$^-$	3720.3	15$^-$	Q	DCO1=0.99 *14*, DCO2=1.09 *19*, DCO3=1.12 *9*.
674.2 [@]	5.1 *8*	7168?	(25$^-$)	6494	(23$^-$)	Q	DCO2=1.02 *14*, DCO3=1.18 *18*.
686.3	43.3 *16*	2550.9	10$^+$	1864.6	8$^+$	Q	DCO1=1.07 *6*, DCO2=1.02 *5*, DCO3=1.08 *3*.
701.1	14.6 *8*	5729	22$^+$	5028	20$^+$	Q	DCO1=0.90 *8*, DCO2=1.06 *9*.
702.2	22.9 *18*	1928.1	7$^-$	1225.9	6$^+$	D	DCO1=0.56 *7*, DCO2=0.60 *13*.
708.8	9.3 *16*	5579	20$^-$	4870	18$^-$		DCO1=0.90 *8*, DCO2=1.16 *20*, DCO3=0.92 *15*; for doublet.
708.8 [@]	9.3 *16*	7519?	(26$^-$)	6811?	(24$^-$)		DCO1=0.90 *8*, DCO2=1.16 *20*, DCO3=0.92 *15*; for doublet.
736.0	10.5 *20*	5112	19$^-$	4376	17$^-$	Q	DCO2=1.02 *20*.
739.3	8.6 *20*	5851	21$^-$	5112	19$^-$		DCO2=1.2 *3*.
743.7	8.9 *18*	4870	18$^-$	4127	16$^-$	Q	DCO2=1.2 *3*, DCO3=1.01 *11*.
746.5 [@]	4.4 *12*	7915?	(27$^-$)	7168?	(25$^-$)		
765.1	10.3 *10*	6494.1	24$^+$	5729	22$^+$	Q	DCO1=0.92 *8*, DCO2=0.98 *8*, DCO3=1.04 *7*.
770.5 [@]	1.9 *10*	8290?	(28$^-$)	7519?	(26$^-$)		
808.2 [@]	3.0 *12*	8723?	(29$^-$)	7915?	(27$^-$)		
819.8	7.4 *8*	7314	26$^+$	6494.1	24$^+$	Q	DCO2=0.98 *13*.
871.6	3.9 *6*	8186	28$^+$	7314	26$^+$	Q	DCO1=1.10 *20*, DCO2=1.08 *13*.
911.1	10.2 *6*	1587.0	5$^-$	675.9	4$^+$	D	DCCO=0.55 *7*, DCO2=0.61 *13*, DCO3=0.64 *6*.
922.6	2.5 *5*	9108	30$^+$	8186	28$^+$		DCO2=0.97 *22*.
968.8 [@]	1.8 *5*	10077?	(32$^+$)	9108	30$^+$		

[†] Uncertainties unstated by 1992Si12.
[‡] Relative photon intensity for E(^{63}Cu)=285 MeV, normalized so Iγ(423.9)=100.
[#] Based on measured DCO1=Iγ(30°,30°)/Iγ(30°,90°), DCO2=Iγ(40°,40°)/Iγ(40°,79°) and/or DCO3=Iγ(40°)/Iγ(79°) recoil gated. for all three ratios, values of 0.5 and 1.0 are expected for stretched D and stretched Q (or D, ΔJ=0) transitions, respectively.
[@] Placement of transition in the level scheme is uncertain.

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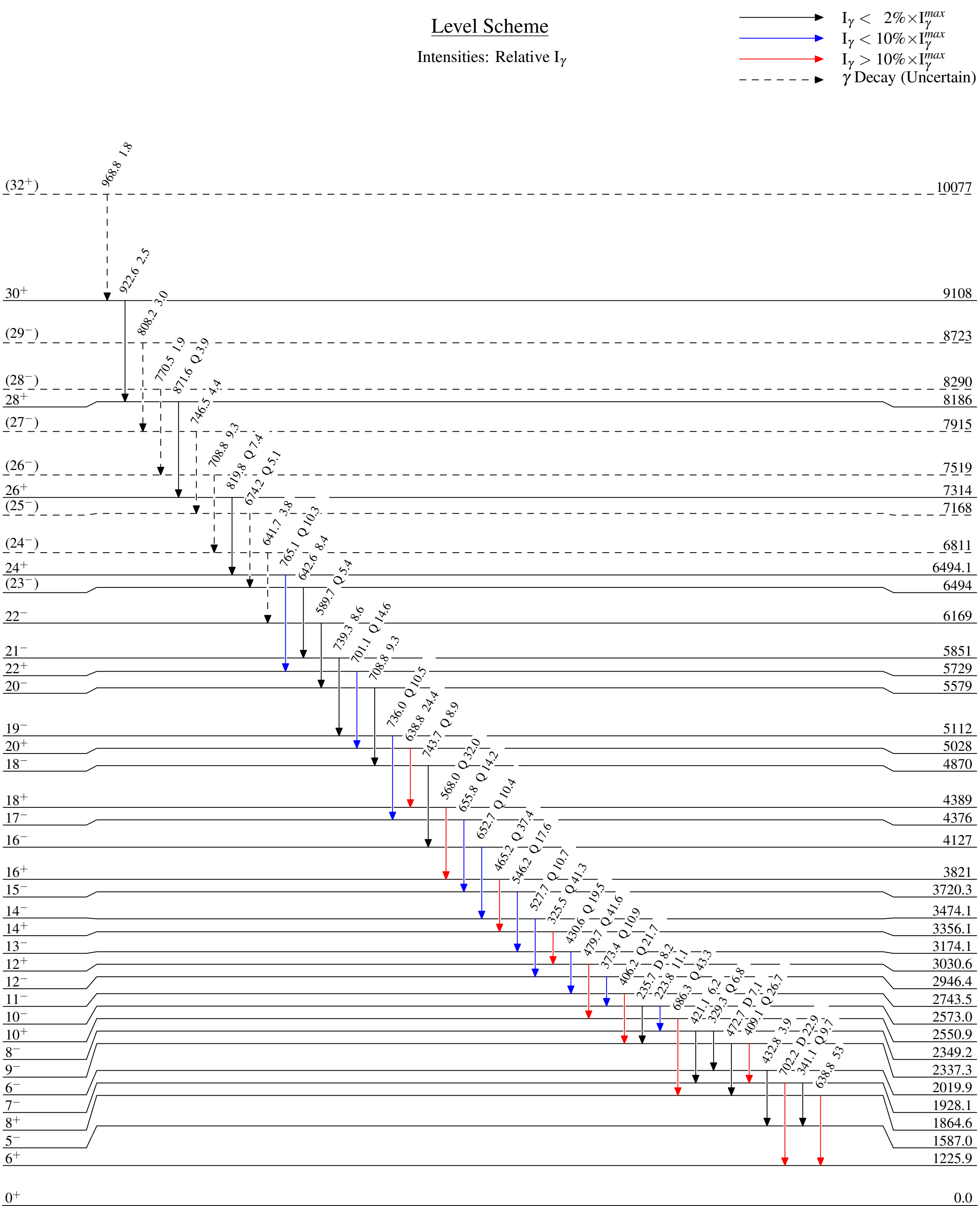
Level Scheme

Intensities: Relative I_γ



$^{166}_{74}W_{92}$

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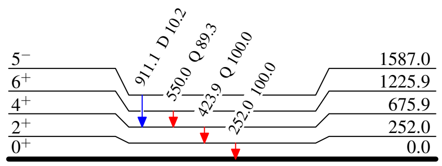
Level Scheme (continued)

Intensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



$^{166}_{74}W_{92}$

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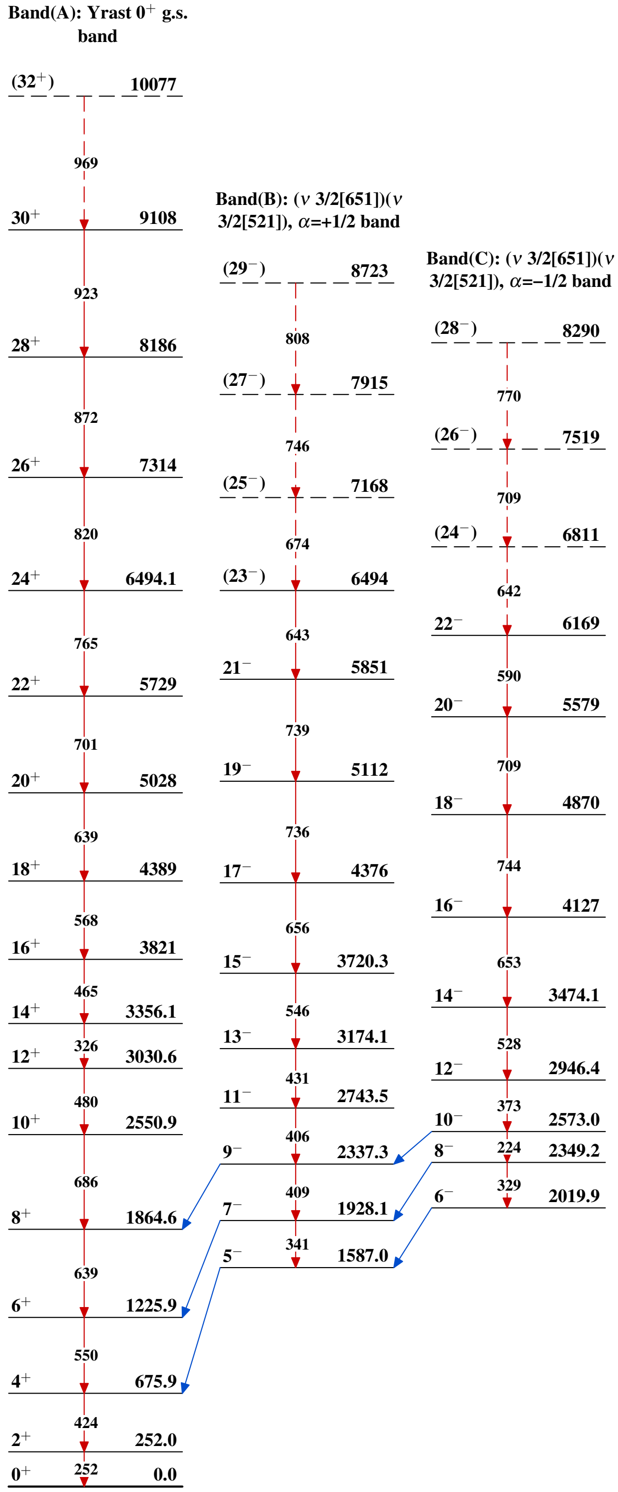

$^{166}_{74}W_{92}$