

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 111,717 (2010)	1-Dec-2009

$Q(\beta^-)=2711$ 8; $S(n)=7477$ 16; $S(p)=12892$ 11; $Q(\alpha)=-6628$ 12 [2012Wa38](#)

Note: Current evaluation has used the following Q record $2.61\text{E}+3$ 3 7.61×10^3 8 $1.301\text{e}+410-6.87\times 10^{39}$ [2003Au03,2009AuZZ](#).

See [1977Sa26](#), [1970Ch11](#), [1990DuZW](#) for E(level) syst of g.s. bands in lighter even palladium isotopes.

 ^{116}Pd LevelsCross Reference (XREF) Flags

- A** ^{116}Rh β^- decay (0.68 s)
B ^{116}Rh β^- decay (0.57 s)
C ^{252}Cf SF decay
D $^{238}\text{U}(\alpha, \text{F}\gamma)$

E(level)	J^π	$T_{1/2}$	XREF	Comments
0 [‡]	0 ⁺	11.8 s 4	ABCD	$\% \beta^- = 100$ $T_{1/2}$: weighted average of 13.6 s 12 (1970Ar19), 12.5 s 6 (1975BrYN), 11.1 s 8 (1986RoZN), 11.5 s 4 (1990Fo07).
340.26 [‡] 8	2 ⁺	0.11 ns 3	ABCD	J^π : from E2 γ to g.s. $T_{1/2}$: from 1974JaZN , following ^{252}Cf SF decay.
737.84 ^a 8	(2) ⁺		ABC	J^π : $\text{Log}ft=5.6$ from 1 ⁺ and (398 γ)(340 γ)(θ) consistent with 2+(M1+E2) 2 ⁺ (E2) 0 ⁺ (1999Bu32).
877.58 [‡] 12	4 ⁺		BCD	J^π : E2 γ to 2 ⁺ and g.s. band.
1066.21 ^a 10	(3 ⁺)		BC	J^π : γ' s to 2 ⁺ and syst.
1109.76 22	(0 ⁺)		A	
1373.01 ^a 13	(4 ⁺)		C	
1532.3 [#] 5	(4 ⁻)		C	
1558.97 [‡] 14	6 ⁺		BCD	J^π : member of g.s. rotational band from systematics of adjacent Rh isotopes.
1694.87 15	(3 ⁻ , 4 ⁺)		B	J^π : $\log ft=5.8$ from J=(6 ⁻).
1718.21 ^a 14	(5 ⁺)		BC	J^π : $\log ft=5.9$ from J=(6 ⁻).
1732.9 3	(0 ⁺)		A	
1809.88 12	(4 ⁻)		B	
1982.40 [@] 13	(5 ⁻)		BC	
2005.7 4			A	
2074.1 4	(2 ⁺)		A	
2101.0 ^a 4	(6 ⁺)		BC	
2275.63 [#] 17	(6 ⁻)		BC	
2315.57 16			B	
2333.1 5			B	
2343.2 [‡] 3	8 ⁺		BCD	
2432.72 24			B	
2435.50 [@] 18	(7 ⁻)		BC	
2448.53 13			B	
2491.6 ^a 4	(7 ⁺)		BC	
2603.25 23			B	
2617.2 4			B	
2654.3 ^{&} 5	(7 ⁻)		BC	
2718.01 21			B	
2812.5 5			B	
2825.0 [#] 4	(8 ⁻)		C	

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Adopted Levels, Gammas (continued) ^{116}Pd Levels (continued)

E(level)	J^π [†]	XREF	E(level)	J^π [†]	XREF	E(level)	J^π [†]	XREF
2840.4 ^a 9	(8 ⁺)	C	3491.6 [#] 7	(10 ⁻)	C	4415.9 [@] 6	(13 ⁻)	C
2868.96 17		B	3630.4 [@] 5	(11 ⁻)	C	4504.8 ^a 9	(13 ⁺ , 12 ⁻)	C
2970.4 [@] 4	(9 ⁻)	C	3682.6 [‡] 6	12 ⁺	CD	5242.9 [‡] 9	16 ⁺	CD
3067.4 ^{&} 7	(9 ⁻)	C	3697.3 ^{&} 9	(11 ⁻)	C	6093.8 [‡]	18 ⁺	D
3091.0 [‡] 5	10 ⁺	CD	3805.3 ^a 7	(11 ⁺ , 10 ⁻)	C	6917.2 [‡]	20 ⁺	D
3255.0 ^a 6	(9 ⁺ , 8 ⁻)	C	4393.2 [‡] 7	14 ⁺	CD	7818.8 [‡]	22 ⁺	D

[†] J^π without comments are based on band assignments.

[‡] Band(A): g.s. Band.

[#] Band(B): band based on 4⁻.

[@] Band(C): band based on 5⁻.

[&] Band(D): band based on (7⁻).

^a Band(E): γ band.

 $\gamma(^{116}\text{Pd})$

$E_i(\text{level})$	J^π_i	E_γ [‡]	I_γ	E_f	J^π_f	Mult. [†]	Comments
340.26	2 ⁺	340.3 1	100	0	0 ⁺	E2	B(E2)(W.u.)=34 10
737.84	(2) ⁺	397.7 1	100 16	340.26	2 ⁺	(M1+E2)	
		737.8 1	70 12	0	0 ⁺		
877.58	4 ⁺	537.3 1	100	340.26	2 ⁺	E2	
1066.21	(3) ⁺	328.4 1	58 13	737.84	(2) ⁺		
		725.9 1	100 40	340.26	2 ⁺	(M1+E2)	
1109.76	(0) ⁺	769.5 2	100	340.26	2 ⁺		
1373.01	(4) ⁺	495.5 2	27	877.58	4 ⁺		
		635.3 2	100	737.84	(2) ⁺	[E2]	
1532.3	(4) ⁻	466.1 5	100	1066.21	(3) ⁺	[E1]	
1558.97	6 ⁺	681.4 1	100	877.58	4 ⁺	E2	
1694.87	(3 ⁻ , 4 ⁺)	628.9 2	100 7	1066.21	(3) ⁺		
		957.0 2	56 5	737.84	(2) ⁺		
1718.21	(5) ⁺	652.0 1	100	1066.21	(3) ⁺	[E2]	
1732.9	(0) ⁺	995.4 5	89 5	737.84	(2) ⁺		
		1392.5 3	100 14	340.26	2 ⁺		
1809.88	(4) ⁻	437.1 2	4.7 8	1373.01	(4) ⁺		
		743.6 1	100 7	1066.21	(3) ⁺		
1982.40	(5) ⁻	172.4 2	4.8 9	1809.88	(4) ⁻		
		609.4 2	13.2 9	1373.01	(4) ⁺		
		1104.7 2	100 7	877.58	4 ⁺	[E1]	
2005.7		1665.4 4	100	340.26	2 ⁺		
2074.1	(2) ⁺	1336.2 4	100	737.84	(2) ⁺		
2101.0	(6) ⁺	728.0 3	100	1373.01	(4) ⁺		
2275.63	(6) ⁻	293.2 3	85 5	1982.40	(5) ⁻		
		465.8 2	100 15	1809.88	(4) ⁻		
		557.4 2	64 5	1718.21	(5) ⁺		
2315.57		620.9 2	100 6	1694.87	(3 ⁻ , 4 ⁺)		
		942.5 2	17.1 12	1373.01	(4) ⁺		
		1437.7 6	12 4	877.58	4 ⁺		
2333.1		1455.5 4	100	877.58	4 ⁺		
2343.2	8 ⁺	784.4 3	100	1558.97	6 ⁺		
2432.72		714.5 2	100	1718.21	(5) ⁺		
2435.50	(7) ⁻	453.0 2	40	1982.40	(5) ⁻		

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Adopted Levels, Gammas (continued)

$\gamma(^{116}\text{Pd})$ (continued)						
$E_i(\text{level})$	J_i^π	$E_\gamma^\ddagger$	I_γ	E_f	J_f^π	Mult. [†]
2435.50	(7 ⁻)	876.5 2	100	1558.97	6 ⁺	E1
2448.53		466.1 1	66 6	1982.40	(5 ⁻)	
		638.7 1	100 7	1809.88	(4 ⁻)	
		889.5 4	3.1 10	1558.97	6 ⁺	
2491.6	(7 ⁺)	773.4 3	100	1718.21	(5 ⁺)	E2
2603.25		287.7 2	100 6	2315.57	6 ⁺	
		1044.2 4	34 9	1558.97	6 ⁺	
		899.0 3	100	1718.21	(5 ⁺)	
2617.2	(7 ⁻)	1095.3 4	100	1558.97	6 ⁺	
2654.3		269.5 2	100 7	2448.53		
2718.01		1159.0 3	93 7	1558.97	6 ⁺	
		1253.5 4	100	1558.97	6 ⁺	
2812.5	(8 ⁻)	389.4 5		2435.50	(7 ⁻)	
2825.0		549.5 5	100	2275.63	(6 ⁻)	
		739.0 [#] 5	100	2101.0	(6 ⁺)	
		420.5 2	50 5	2448.53		
2840.4	(8 ⁺)	553.5 2	100 5	2315.57		
2868.96		886.5 3	30 5	1982.40	(5 ⁻)	
		1058.7 3	65 20	1809.88	(4 ⁻)	
		534.5 4	100	2435.50	(7 ⁻)	
2970.4	(9 ⁻)	627.4 4	44	2343.2	8 ⁺	
		413.1 5	100	2654.3	(7 ⁻)	
3067.4		748.0 4	100	2343.2	8 ⁺	
3091.0		763.4 4	100	2491.6	(7 ⁺)	
3255.0	(9 ⁺ , 8 ⁻)	666.6 5	100	2825.0	(8 ⁻)	E2
3491.6		539.6 4	26	3091.0	10 ⁺	
3630.4		659.9 4	100	2970.4	(9 ⁻)	
		591.6 4	100	3091.0	10 ⁺	
3682.6	(11 ⁻)	629.1 [#] 5	100	3067.4	(9 ⁻)	
		550.3 4	100	3255.0	(9 ⁺ , 8 ⁻)	
3697.3		710.6 4	100	3682.6	12 ⁺	
3805.3		785.5 4	100	3630.4	(11 ⁻)	
4393.2	(13 ⁺ , 12 ⁻)	699.5 5	100	3805.3	(11 ⁺ , 10 ⁻)	
4415.9		849.7 4	100	4393.2	14 ⁺	
4504.8		849.4 4	100	5242.9	16 ⁺	
5242.9		823.4 4	100	6093.8	18 ⁺	
6093.8	(11 ⁺ , 10 ⁻)	901.6 4	100	6917.2	20 ⁺	
6917.2						
7818.8						

[†] From ^{116}Rh β^- decay and $\gamma\gamma(t)$ in ^{252}Cf SF Decay.

[‡] From ^{116}Rh β^- decay.

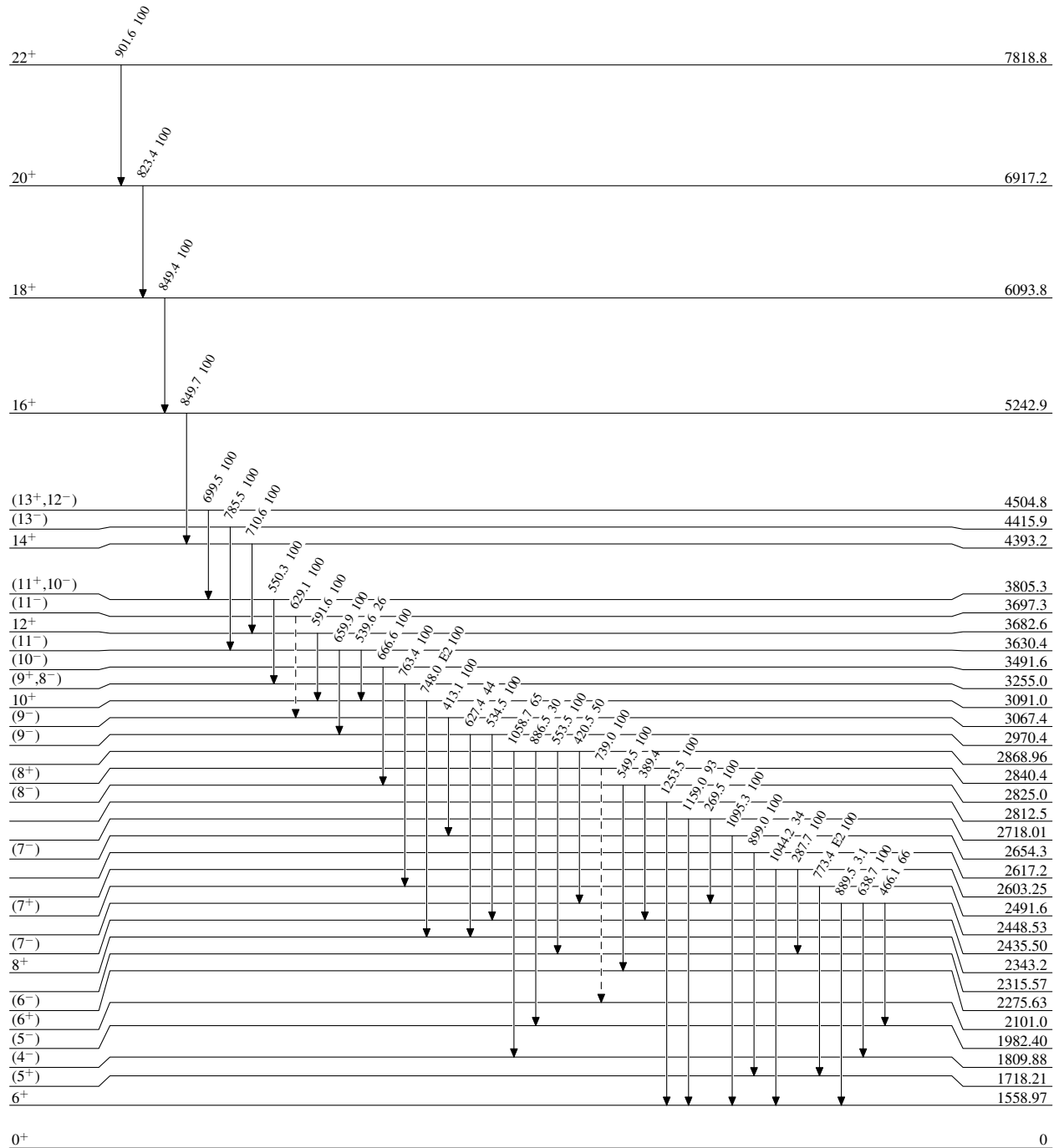
[#] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Legend

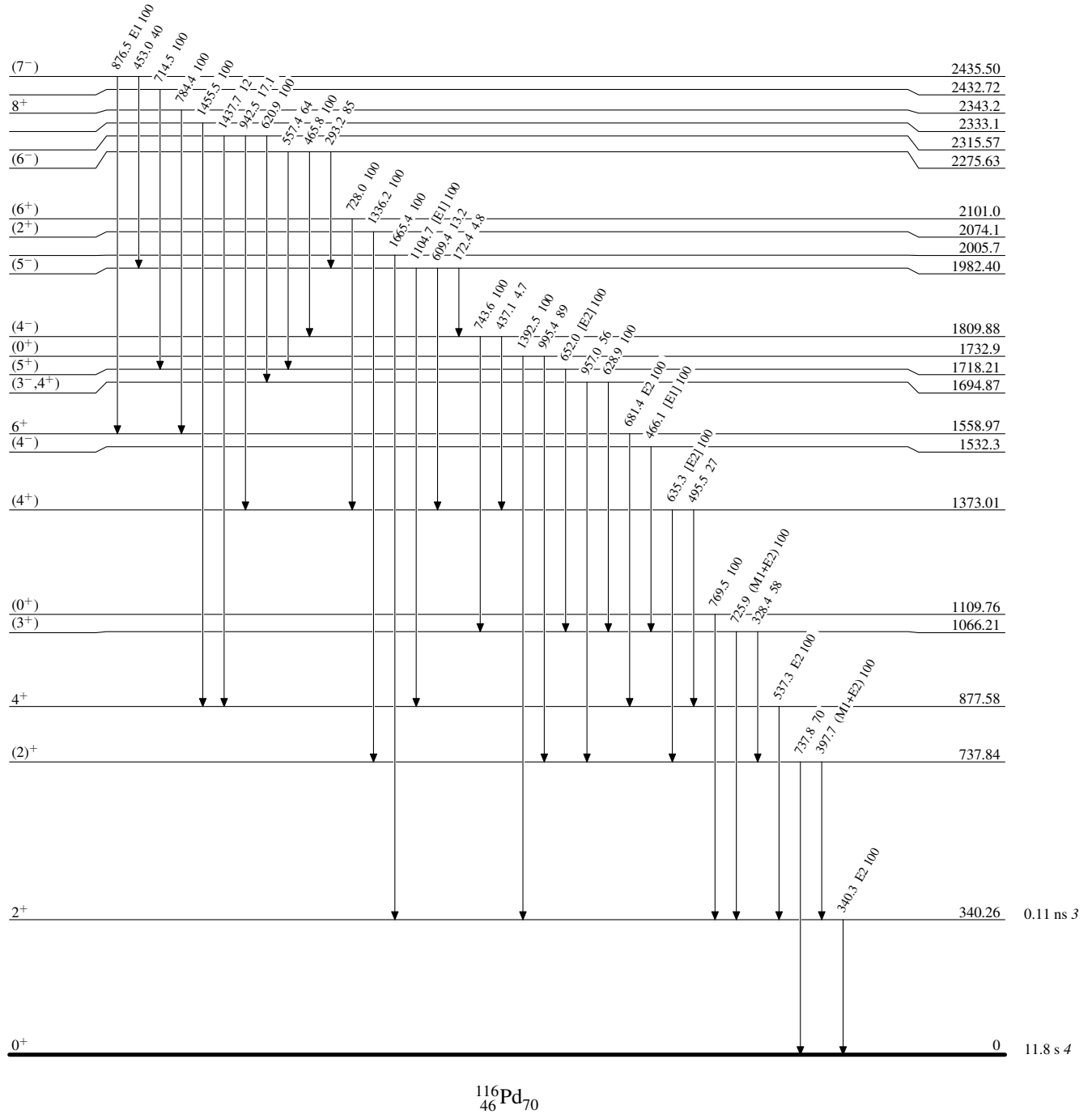
Level Scheme

Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain)


Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Relative photon branching from each level



Adopted Levels, Gammas