^{110}**Pd(n,n$'\gamma$)**   **1975Go11**

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	G. Gürdal and F. G. Kondev	NDS 113, 1315 (2012)	1-Aug-2011

Target: 4.4 g 99% enriched ^{110}Pd. The neutron beam was provided by the water-moderated reactor of Baghdad Research Institute. The γ-rays were detected using a 30 cm^3 coaxial GE detector. Measured: Eγ and Iγ.

^{110}Pd Levels

E(level)[†]	J$^{\pi}$[‡]	E(level)[†]	J$^{\pi}$[‡]	E(level)[†]	J$^{\pi}$[‡]	E(level)[†]
0.0	0$^+$	1398.10 *12*	(2$^+$,3$^+$,4$^+$)	2125.3 *3*	1$^-$	2446.41 *23*
373.80 *7*	2$^+$	1470.07 *10*	(1$^+$,2$^+$)	2140.5?		2474.3 *3*
813.60 *7*	2$^+$	1573.92 *23*	(6$^+$)	2141.7?		2498.8?
920.82 *11*	4$^+$	1719.06 *16*		2193.0 *3*		2563.8 *4*
946.73 *11*	0$^+$	1889.71 *21*		2276.1 *3*		2686.6 *4*
1170.66 *11*	0$^+$	1900.14 *23*		2293.3 *3*		2714.6 *9*
1212.37 *14*	(3$^+$)	1934.50 *19*		2322.09 *25*		2777.1?
1214.42 *17*	(2$^+$)	2037.67 *18*	3$^-$	2369.7 *5*		2805.3 *3*

† From least-squares fit to Eγ's.
‡ From 1975Go11, based on the comparison between the measured and the calculated (using the statistical model) populations of the states and the decay pattern.

$\gamma(^{110}$Pd$)$

E$_{\gamma}$[†]	I$_{\gamma}$[†]	E$_i$(level)	J$_i^{\pi}$	E$_f$	J$_f^{\pi}$
^{x}208.3 *5*	0.095 *2*				
^{x}230.2 *5*	0.12 *2*				
267.4 *3*	0.61 *10*	1214.42	(2$^+$)	946.73	0$^+$
^{x}275.0 *3*	0.23 *3*				
291.6 *2*	0.54 *4*	1212.37	(3$^+$)	920.82	4$^+$
298.8 *3*	0.22 *4*	1470.07	(1$^+$,2$^+$)	1170.66	0$^+$
356.9 *2*	0.88 *4*	1170.66	0$^+$	813.60	2$^+$
373.80 *8*	100.0 *1*	373.80	2$^+$	0.0	0$^+$
398.8 *2*	5.2 *5*	1212.37	(3$^+$)	813.60	2$^+$
401.0 *7*	0.7 *3*	1214.42	(2$^+$)	813.60	2$^+$
439.76 *8*	23.6 *3*	813.60	2$^+$	373.80	2$^+$
463.9 *4*	0.18 *2*	1934.50		1470.07	(1$^+$,2$^+$)
477.5 *3*	1.02 *15*	1398.10	(2$^+$,3$^+$,4$^+$)	920.82	4$^+$
547.04 *10*	9.2 *5*	920.82	4$^+$	373.80	2$^+$
572.89 *10*	5.4 *3*	946.73	0$^+$	373.80	2$^+$
584.48 *10*	1.65 *10*	1398.10	(2$^+$,3$^+$,4$^+$)	813.60	2$^+$
^{x}641.0 *11*	0.040 *15*				
^{x}648.51 *16*	0.51 *4*				
653.1 *2*	0.52 *5*	1573.92	(6$^+$)	920.82	4$^+$
656.42 *15*	0.93 *6*	1470.07	(1$^+$,2$^+$)	813.60	2$^+$
^{x}672.4 *11*	0.039 *15*				
687.7 *3*	0.16 *2*	1900.14		1212.37	(3$^+$)
722.5 *4*	0.110 *15*	1934.50		1212.37	(3$^+$)
729.9 *10*	0.07 *2*	1900.14		1170.66	0$^+$
^{x}762.2 *4*	0.13 *2*				
^{x}770.3 *2*	0.61 *5*				
^{x}773.0 *8*	0.11 *3*				
796.83 *10*	1.84 *12*	1170.66	0$^+$	373.80	2$^+$
813.52 *10*	4.2 *3*	813.60	2$^+$	0.0	0$^+$

^{110}Pd(n,n'γ)　　1975Go11 (continued)

γ(^{110}Pd) (continued)

E$_\gamma$[†]	I$_\gamma$[†]	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$
838.5 3	3.0 5	1212.37	(3$^+$)	373.80	2$^+$
840.9 7	1.6 4	1214.42	(2$^+$)	373.80	2$^+$
905.2 2	0.82 6	1719.06		813.60	2$^+$
929.2[#] 3	0.29 4	2141.7?		1212.37	(3$^+$)
941.5 12	0.031 14	1889.71		946.73	0$^+$
978.8 5	0.078 16	1900.14		920.82	4$^+$
1014.0 5	0.12 3	1934.50		920.82	4$^+$
1048.3 2	0.54 4	2446.41		1398.10	(2$^+$,3$^+$,4$^+$)
[x]1065.5 4	0.10 2				
1076.7 8	0.047 15	1889.71		813.60	2$^+$
1076.7 8	0.047 15	2474.3		1398.10	(2$^+$,3$^+$,4$^+$)
1096.29 13	1.31 9	1470.07	(1$^+$,2$^+$)	373.80	2$^+$
1120.8 3	0.11 2	1934.50		813.60	2$^+$
[x]1150.09 16	0.38 3				
1214.5 2	2.52 16	1214.42	(2$^+$)	0.0	0$^+$
1221.0[#] 4	0.26 3	2141.7?		920.82	4$^+$
1224.2 3	0.22 2	2037.67	3$^-$	813.60	2$^+$
1286.7[#] 4	0.11 2	2498.8?		1212.37	(3$^+$)
[x]1309.6 8	0.051 15				
[x]1322.1 7	0.057 15				
1345.5 2	0.23 2	1719.06		373.80	2$^+$
1354.9 7	0.062 15	2276.1		920.82	4$^+$
1375.3[‡] 3	0.64 7	2322.09		946.73	0$^+$
1378.8 4	0.44 7	2193.0		813.60	2$^+$
[x]1390.2 8	0.051 13				
1401.2 4	0.09 2	2322.09		920.82	4$^+$
1407.1 10	0.036 13	2805.3		1398.10	(2$^+$,3$^+$,4$^+$)
[x]1441.6 7	0.061 15				
1449.5 20	0.019 9	2369.7		920.82	4$^+$
1462.5 3	0.30 3	2276.1		813.60	2$^+$
1470.2 2	0.40 4	1470.07	(1$^+$,2$^+$)	0.0	0$^+$
1515.9 2	0.92 8	1889.71		373.80	2$^+$
1526.7 4	0.17 2	1900.14		373.80	2$^+$
[x]1548.6 3	0.20 2				
1556.3 10	0.056 15	2369.7		813.60	2$^+$
1560.8 4	0.14 2	1934.50		373.80	2$^+$
1577.3[#] 7	0.07 2	2498.8?		920.82	4$^+$
1592.9 3	0.25 3	2805.3		1212.37	(3$^+$)
[x]1614.5 5	0.11 2				
[x]1626.3 20	0.024 10				
[x]1655.9 5	0.13 3				
1663.8 2	1.10 11	2037.67	3$^-$	373.80	2$^+$
[x]1671.4 9	0.075 2				
[x]1677.4 4	0.26 5				
[x]1681.4 6	0.16 5				
1751.3 5	0.10 2	2125.3	1$^-$	373.80	2$^+$
1766.7[#] 3	0.57 6	2140.5?		373.80	2$^+$
1819.8 4	0.26 3	2193.0		373.80	2$^+$
1830.8[#] 11	0.043 15	2777.1?		946.73	0$^+$
[x]1846.6 6	0.10 2				
1859.5 11	0.043 12	2805.3		946.73	0$^+$
[x]1865.0 7	0.07 2				
1873.2 5	0.10 3	2686.6		813.60	2$^+$
1900.2 20	0.022 10	2714.6		813.60	2$^+$

^{110}Pd(n,n'γ)   **1975Go11** (continued)

γ(^{110}Pd) (continued)

E$_\gamma$[†]	I$_\gamma$[†]	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$	E$_\gamma$[†]	I$_\gamma$[†]	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$
1919.5 3	0.28 5	2293.3		373.80	2$^+$	2341.0 10	0.039 12	2714.6		373.80	2$^+$
1948.7 11	0.04 2	2322.09		373.80	2$^+$	^{x}2363.0 5	0.094 2				
^{x}1967.5 8	0.060 2					2369.6 6	0.071 16	2369.7		0.0	0$^+$
^{x}1978.1 13	0.038 13					2402.8[#] 10	0.038 12	2777.1?		373.80	2$^+$
^{x}2029.2 8	0.060 15					^{x}2412.0 5	0.085 2				
^{x}2043.8 8	0.059 15					^{x}2428.8 8	0.056 14				
^{x}2056.9 8	0.05 2					^{x}2445.4 8	0.050 13				
^{x}2066.9 8	0.050 13					2474.4 4	0.14 2	2474.3		0.0	0$^+$
^{x}2092.4 4	0.14 3					^{x}2487.1 5	0.096 2				
2100.0 6	0.08 2	2474.3		373.80	2$^+$	^{x}2521.5 6	0.069 16				
^{x}2117.8 6	0.08 2					^{x}2567.3 6	0.071 16				
2125.3 3	0.68 7	2125.3	1$^-$	0.0	0$^+$	^{x}2578.2 4	0.11 2				
^{x}2161.0 7	0.065 15					^{x}2601.5 7	0.059 14				
^{x}2174.8 12	0.034 12					^{x}2620.5 4	0.11 2				
2190.0 4	0.12 2	2563.8		373.80	2$^+$	^{x}2649.6 9	0.045 13				
^{x}2205.9 8	0.047 13					^{x}2784.8 5	0.090 2				
^{x}2228.0 6	0.080 2					^{x}2827.8 10	0.041 12				
^{x}2237.1 13	0.029 12					^{x}2851.5 13	0.029 12				
^{x}2244.7 10	0.040 12					^{x}2896.1 7	0.072 2				
^{x}2260.6 5	0.12 2					^{x}2930.4 7	0.071 2				
2312.7 4	0.19 2	2686.6		373.80	2$^+$	^{x}2949.2 8	0.055 2				
2322.6 10	0.040 12	2322.09		0.0	0$^+$	^{x}2958.5 7	0.084 2				

[†] From 1975Go11.
[‡] Given as 1357.3 keV *3* in Table 2 (1975Go11).
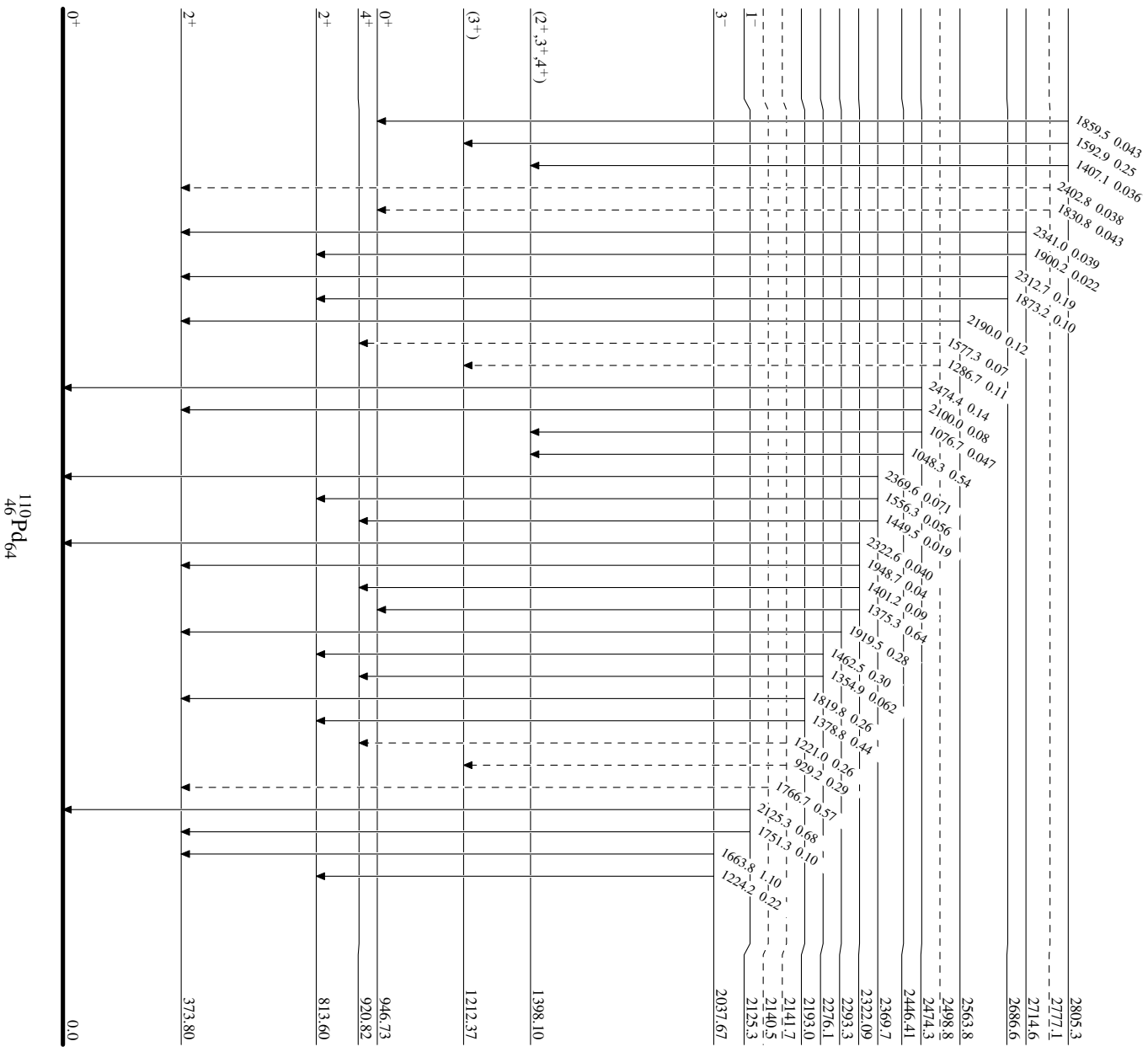[#] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

From ENSDF

$^{110}\textbf{Pd(n,n'}\gamma\textbf{)}$ **1975Go11**

Level Scheme

Intensities: Type not specified

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)

1859.5 0.043
1592.9 0.25
1407.1 0.036
2402.8 0.038
1830.8 0.043
2341.0 0.039
1900.2 0.022
2312.7 0.19
1873.2 0.10
2190.0 0.12
1577.3 0.07
1286.7 0.11
2474.4 0.14
2100.0 0.08
1076.7 0.047
1048.3 0.54
2369.6 0.071
1556.3 0.056
1449.5 0.019
2322.6 0.040
1948.7 0.04
1401.2 0.09
1375.3 0.64
1919.5 0.28
1462.5 0.30
1354.9 0.062
1819.8 0.26
1378.8 0.44
1221.0 0.26
929.2 0.29
1766.7 0.57
2125.3 0.68
1751.3 0.10
1663.8 1.10
1224.2 0.22

0+ 0.0
2+ 373.80
2+ 813.60
4+ 920.82
0+ 946.73
(3+) 1212.37
(2+,3+,4+) 1398.10
3− 2037.67
1− 2125.3
2140.5
2141.7
2193.0
2276.1
2293.3
2322.09
2369.7
2446.41
2474.3
2498.8
2563.8
2686.6
2714.6
2777.1
2805.3

^{110}**Pd(n,n'γ)**   **1975Go11**

Level Scheme (continued)

Intensities: Type not specified

Legend

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

1560.8 0.14
1120.8 0.11
1014.0 0.12
722.5 0.110
463.9 0.18
1526.7 0.17
978.8 0.078
729.9 0.07
687.7 0.16
1515.9 0.92
1076.7 0.047
941.5 0.031
1345.5 0.23
905.2 0.82
653.1 0.52
1470.2 0.40
1096.29 1.31
656.42 0.93
298.8 0.22
584.48 1.65
477.5 1.02
1214.5 2.52
840.9 1.6
401.0 0.7
267.4 0.61
838.5 3.0
398.8 5.2
291.6 0.54
796.83 1.84
356.9 0.88
572.89 5.4
547.04 9.2
813.52 4.2
439.76 23.6
373.80 100.0

0+

2+

2+

0+
4+
0+
(2+)
(3+)
(2+,3+,4+)
(1+,2+)
(6+)

$^{110}_{46}$Pd$_{64}$

5

373.80

813.60
920.82
946.73
1170.66
1212.37
1214.42
1398.10
1470.07
1573.92
1719.06
1889.71
1900.14
1934.50

0.0