

¹⁰⁶Pd(n,n'γ) 1974Ah01,1975GoZX

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	D. De Frenne and A. Negret		NDS 109, 943 (2008)	1-May-2007

1975GoZX: inelastic scattering of reactor fast neutrons. Measured: E_γ,I_γ. Deduced: ¹⁰⁶Pd levels, J^π.

1974Ah01: inelastic scattering of reactor fast neutrons. Measured: E_γ,I_γ.

Level scheme and transition placement are inferred by 1975GoZX from different reaction and decay studies, including I_γ branching ratios.

¹⁰⁶Pd Levels

E(level)	J ^π †	E(level)	J ^π †	E(level)	J ^π †	E(level)	J ^π †
0.0	0 ⁺	2242.56 20	2 ⁺	2591.2 4	(2,3) ⁺	2902.9 4	2 ⁺
511.85 9	2 ⁺	2278.5 4	0 ⁺	2626.41 21	(2,3) ⁺	2908.7 7	(1 ⁻)
1127.97 10	2 ⁺	2284.3?‡ 4	4 ⁺	2648.9 6	4 ⁺	2918.1 7	2 ⁺
1133.69 13	0 ⁺	2305.57 18	4 ⁻	2705.5 4	(1) ⁺	2936.0 6	(2 ⁻ ,3 ⁻)
1229.08 12	4 ⁺	2308.69 23	2 ⁺	2741.0 5	4 ⁺	2969.8 4	3 ⁻
1557.74 12	3 ⁺	2350.65 20	4 ⁺	2748.2 4	2,3 ⁻	3036.6 10	1,2
1562.44 14	2 ⁺	2366.04 2	5 ⁺	2774.9 3	(4 ⁺)	3054.9 7	1 ⁺
1706.17 17	0 ⁺	2400.8 3	(3 ⁻)	2784.2 4	2 ⁺	3069.9 6	2 ⁺
1909.36 17	2 ⁺	2439.31 25	2 ⁺	2821.1 4	2 ⁺	3083. 6	0
1931.88 17	4 ⁺	2472.7 3	1 ⁺ ,2 ⁺	2850.4 5	⁺	3120.0 10	2 ⁺ ,3 ⁺
2001.17 23	0 ⁺	2484.8 3	(1 ⁻)	2861.0 4	(⁺)	3161.1? 5	2 ⁺
2076.73 22	4 ⁺	2499.7 3	2 ⁻	2886.5 7	(⁻)	3166.2? 10	(1,2 ⁺)
2084.30 12	3 ⁻	2578.42 24	(5 ⁻)	2897.8 8	(1 ⁻ ,4 ⁻)	3173.8? 6	(2 ⁺ ,3 ⁺)

† From Adopted Levels.

‡ Probably corresponds to adopted 2282 level.

γ(¹⁰⁶Pd)

Gamma spectra recorded at 90° to incident beam.

E _γ	I _γ	E _i (level)	J _i ^π	E _f	J _f ^π	Comments
221.0 2	0.23 2	2305.57	4 ⁻	2084.30	3 ⁻	
^x 370.0 2	0.46 5					
^x 392.7 2	0.48 5					
429.84 10	3.14 19	1557.74	3 ⁺	1127.97	2 ⁺	
471.5 2	0.27 2	2472.7	1 ⁺ ,2 ⁺	2001.17	0 ⁺	
511.80 10	100	511.85	2 ⁺	0.0	0 ⁺	I _γ : includes I(γ [±]) component.
578.1 2	0.13 1	1706.17	0 ⁺	1127.97	2 ⁺	
616.10 10	14.9 8	1127.97	2 ⁺	511.85	2 ⁺	
621.84 10	5.2 4	1133.69	0 ⁺	511.85	2 ⁺	
659.3 3	0.10 2	2591.2	(2,3) ⁺	1931.88	4 ⁺	
680.0 2	0.57 8	2242.56	2 ⁺	1562.44	2 ⁺	
685.0 3	0.20 2	2242.56	2 ⁺	1557.74	3 ⁺	
702.8 2	0.42 5	1931.88	4 ⁺	1229.08	4 ⁺	
717.19 10	10.0 6	1229.08	4 ⁺	511.85	2 ⁺	
748.1 2	0.93 2	2305.57	4 ⁻	1557.74	3 ⁺	
781.6 5	0.038 12	1909.36	2 ⁺	1127.97	2 ⁺	
792.9 2	0.25 4	2350.65	4 ⁺	1557.74	3 ⁺	
803.9 2	0.84 8	1931.88	4 ⁺	1127.97	2 ⁺	
808.3 2	0.37 4	2366.04	5 ⁺	1557.74	3 ⁺	

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$^{106}\text{Pd}(n,n'\gamma)$ **1974Ah01,1975GoZX** (continued) $\gamma(^{106}\text{Pd})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
$^x825.6$ 4	0.064 15					
847.5 2	0.79 24	2076.73	4 ⁺	1229.08	4 ⁺	
873.2 2	0.58 6	2001.17	0 ⁺	1127.97	2 ⁺	
937.3^{\ddagger} 4	0.055 14	2499.7	2 ⁻	1562.44	2 ⁺	
949.5 6	0.024 10	2076.73	4 ⁺	1127.97	2 ⁺	
956.1 3	0.17 3	2084.30	3 ⁻	1127.97	2 ⁺	
$^x975.0$ 6	0.034 10					
1020.7 3	0.18 3	2578.42	(5 ⁻)	1557.74	3 ⁺	
1045.9 2	5.2 4	1557.74	3 ⁺	511.85	2 ⁺	
1050.5 2	4.7 4	1562.44	2 ⁺	511.85	2 ⁺	
1055.3 5	0.41 10	2284.3?	4 ⁺	1229.08	4 ⁺	
1086.5 5	0.047 13	2648.9	4 ⁺	1562.44	2 ⁺	
1114.7	0.30	2242.56	2 ⁺	1127.97	2 ⁺	E_γ, I_γ : from 1975GoZX. No ΔE and ΔI_γ given.
1127.9 2	4.9 4	1127.97	2 ⁺	0.0	0 ⁺	
1150.2	0.038	2278.5	0 ⁺	1127.97	2 ⁺	E_γ, I_γ : from 1975GoZX. No ΔE and ΔI_γ given.
1156.3^{\ddagger} 4	0.08 2	2284.3?	4 ⁺	1127.97	2 ⁺	E_γ : Observed only by 1975GoZX.
$^x1168.2$ 2	1.08 10					
1180.4 3	0.25 3	2308.69	2 ⁺	1127.97	2 ⁺	
1194.4 2	0.94 10	1706.17	0 ⁺	511.85	2 ⁺	
1217.0 3	0.19 4	2774.9	(4 ⁺)	1557.74	3 ⁺	
1222.7 3	0.24 5	2350.65	4 ⁺	1127.97	2 ⁺	
1272.4 3	0.33 4	2400.8	(3 ⁻)	1127.97	2 ⁺	
1303.4 4	0.11 3	2861.0	(⁺)	1557.74	3 ⁺	
1349.3 3	0.36 4	2578.42	(5 ⁻)	1229.08	4 ⁺	
1371.7 3	0.37 4	2499.7	2 ⁻	1127.97	2 ⁺	
1397.4 2	1.32 13	1909.36	2 ⁺	511.85	2 ⁺	
$^x1417.3$ 4	0.11 2					
1498.4 2	0.27 3	2626.41	(2,3) ⁺	1127.97	2 ⁺	
$^x1523.2$ 2	0.28 3					
$^x1546.3$ 6	0.069 15					
1562.4 2	0.50 5	1562.44	2 ⁺	0.0	0 ⁺	
1566.3	0.24 8	2076.73	4 ⁺	511.85	2 ⁺	E_γ : from 1975GoZX; others: 1567.7 4 (1974Ah01), 1565.4 3 (1973In08, ^{106}Ag decay).
1572.39 10	2.5 3	2084.30	3 ⁻	511.85	2 ⁺	
1602.2 12	0.020 10	3161.1?	2 ⁺	1557.74	3 ⁺	
1616.4 6	0.061 18	3173.8?	(2 ⁺ ,3 ⁺)	1557.74	3 ⁺	
1621.3 4	0.090 17	2850.4	⁺	1229.08	4 ⁺	
1631.7 6	0.057 13	2861.0	(⁺)	1229.08	4 ⁺	
1648.4	<0.23	2774.9	(4 ⁺)	1127.97	2 ⁺	E_γ : multiplet.
1668.8 7	0.058 13	2897.8	(1 ⁻ ,4 ⁻)	1229.08	4 ⁺	
$^x1678.4$ 7	0.064 13					
1766.7 4	0.20 3	2278.5	0 ⁺	511.85	2 ⁺	
$^x1792.8$ 7	0.11 3					
1797.1 3	0.39 5	2308.69	2 ⁺	511.85	2 ⁺	
1838.6 10	0.020 10	2350.65	4 ⁺	511.85	2 ⁺	
$^x1868.2$ 7	0.069 13					
1889.7 4	0.17 4	2400.8	(3 ⁻)	511.85	2 ⁺	
1909.5 3	0.46 5	1909.36	2 ⁺	0.0	0 ⁺	
1927.2 3	0.31 4	2439.31	2 ⁺	511.85	2 ⁺	
1973.1 10	0.038 18	2484.8	(1 ⁻)	511.85	2 ⁺	
1988.3 3	0.50 5	2499.7	2 ⁻	511.85	2 ⁺	
$^x2019.4$ 9	0.051 12					
$^x2034.3$ 9	0.050 12					
2045.1 9	0.066 15	3173.8?	(2 ⁺ ,3 ⁺)	1127.97	2 ⁺	
$^x2095.2$ 9	0.057 14					

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$^{106}\text{Pd}(n,n'\gamma)$ **1974Ah01,1975GoZX** (continued) $\gamma(^{106}\text{Pd})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
2114.7 5	0.13 2	2626.41	(2,3) ⁺	511.85	2 ⁺	
2193.3 4	0.15 2	2705.5	(1) ⁺	511.85	2 ⁺	
^x 2212.1 14	0.030 14					
2229.5 10	0.056 14	2741.0	4 ⁺	511.85	2 ⁺	
2236.3 4	0.17 2	2748.2	2,3 ⁻	511.85	2 ⁺	
2243.5	0.056	2242.56	2 ⁺	0.0	0 ⁺	E_γ, I_γ : from 1975GoZX. No ΔE and ΔI_γ given.
2272.3 4	0.108 17	2784.2	2 ⁺	511.85	2 ⁺	
2309 [†]	0.033 [†] CA	2308.69	2 ⁺	0.0	0 ⁺	I_γ : from branching: $I_\gamma(2309\gamma)/I_\gamma(1797\gamma)=0.085$ 13 (1976SaYX, ^{106}Ag decay).
2309.2 [†] 4	0.056 [†] CA	2821.1	2 ⁺	511.85	2 ⁺	I_γ : from $I_\gamma(2309\gamma)$ doublet=0.089 15 minus $I_\gamma=0.033$ component from 2309 initial state.
^x 2315.9 7	0.044 12					
2374.6 7	0.051 13	2886.5	(⁻)	511.85	2 ⁺	
2391.0 4	0.099 16	2902.9	2 ⁺	511.85	2 ⁺	
2396.8 7	0.066 15	2908.7	(1 ⁻)	511.85	2 ⁺	
2406.2 7	0.051 12	2918.1	2 ⁺	511.85	2 ⁺	
2424.1 6	0.076 15	2936.0	(2 ⁻ ,3 ⁻)	511.85	2 ⁺	
2439.7 4	0.112 19	2439.31	2 ⁺	0.0	0 ⁺	
2457.9 3	0.27 3	2969.8	3 ⁻	511.85	2 ⁺	
2484.7 3	0.48 5	2484.8	(1 ⁻)	0.0	0 ⁺	
2543.0 7	0.051 13	3054.9	1 ⁺	511.85	2 ⁺	
2558.0 6	0.081 15	3069.9	2 ⁺	511.85	2 ⁺	
2571.3 6	0.060 14	3083.	0	511.85	2 ⁺	
2608.1 10	0.038 13	3120.0	2 ⁺ ,3 ⁺	511.85	2 ⁺	
2649.3 5	0.088 16	3161.1?	2 ⁺	511.85	2 ⁺	
2706.6 7	0.060 14	2705.5	(1) ⁺	0.0	0 ⁺	
2740.9 5	0.11 3	2741.0	4 ⁺	0.0	0 ⁺	
^x 2790.7 5	0.13 3					
^x 2819.2 7	0.080 16					
^x 2956.5 7	0.062 15					
3036.6 10	0.051 25	3036.6	1,2	0.0	0 ⁺	
^x 3100.0 10	0.060 30					
3166.1 10	0.036 14	3166.2?	(1,2 ⁺)	0.0	0 ⁺	

[†] Multiply placed with intensity suitably divided.

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

^x γ ray not placed in level scheme.

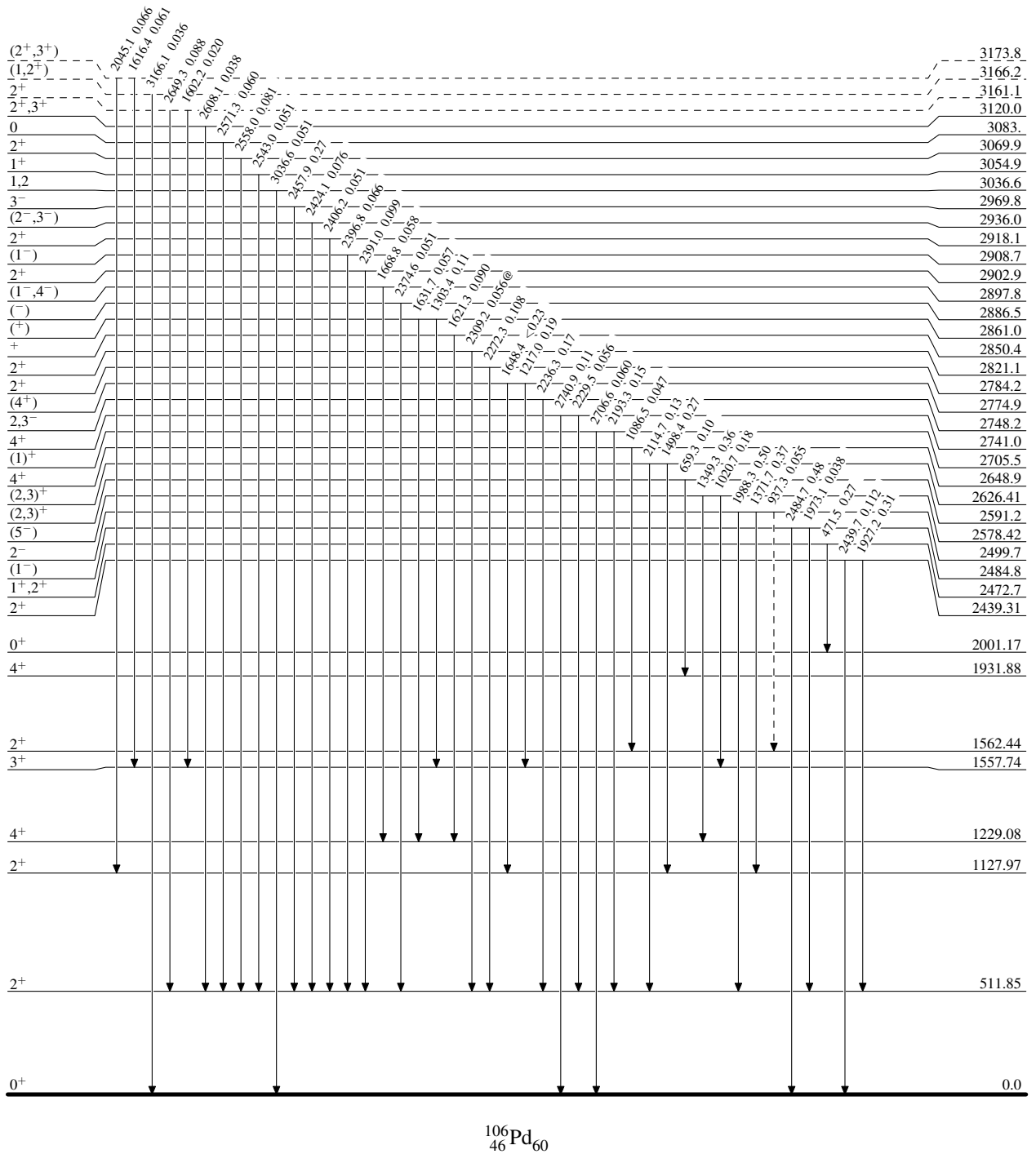
$^{106}\text{Pd}(n,n'\gamma)$ 1974Ah01,1975GoZX

Level Scheme

Intensities: Type not specified
@ 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)



$^{106}_{46}\text{Pd}_{60}$

$^{106}\text{Pd}(n,n'\gamma)$ 1974Ah01,1975GoZX

Level Scheme (continued)

Intensities: Type not specified
@ 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)

