

¹⁹⁶Pt(¹²C,6n γ) **1990Fa03**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 196,342 (2024)	1-Sep-2023

1990Fa03: E(¹²C)=100 MeV, pulsed beam; detectors: HPGe and Ge(Li); measured: $\gamma\gamma(t)$, $\gamma(\theta)$, $\gamma(t)$, E γ and I γ .

²⁰²Po Levels

E(level) [†]	J π [‡]	T _{1/2} [‡]	Comments
0	0 ⁺		
677.2 5	2 ⁺		
1248.7 7	4 ⁺		
1691.7 9	6 ⁺		
1691.7+x 5	8 ⁺	85 ns 15	Additional information 1.
2218.1+x 4	9 ⁻	<11 ns	
2604.2+x 4	11 ⁻	>200 ns	T _{1/2} : Because 912.5 $\gamma(t)$ and 386.0 $\gamma(t)$ are close to the repetition time of beam bursts, value can not be determined accurately.
2897.5+x 5	11 ⁻		
3040.6+x 5	12 ⁺	19 ns 4	
3435.3+x 7	13 ⁻		
3573.6+x 8	15 ⁻	11 ns 3	
3616.0+x 7	14 ⁺		
4071.2+x 8	16 ⁺		
4609.2+x 10	(18 ⁺)		
4612.7+x 10	18 ⁺		
4738.8+x 10	18 ⁺		
4822.9+x 11	(20 ⁺)		
4923.5+x 11	(19 ⁺)		
5188.7+x 12	(22 ⁺)		
5209.6+x 11	(20 ⁺)		
5293.3+x 12	(21 ⁺)		
5528.9+x 12			

[†] From a least-square fit to E γ by assuming $\Delta E\gamma=0.5$ keV.

[‡] From **1990Fa03**.

$\gamma(^{202}\text{Po})$

E γ [†]	I γ [†]	E _i (level)	J π _i	E _f	J π _f	Mult. [‡]	α [#]	Comments
138.3	14	3573.6+x	15 ⁻	3435.3+x	13 ⁻	[E2]	1.882 26	$\alpha(K)=0.343$ 5; $\alpha(L)=1.141$ 16; $\alpha(M)=0.304$ 4 $\alpha(N)=0.0779$ 11; $\alpha(O)=0.01488$ 21; $\alpha(P)=0.001356$ 19
143.1	23	3040.6+x	12 ⁺	2897.5+x	11 ⁻	[E1]	0.1868 26	$\alpha(K)=0.1492$ 21; $\alpha(L)=0.0287$ 4; $\alpha(M)=0.00679$ 10 $\alpha(N)=0.001725$ 24; $\alpha(O)=0.000346$ 5; $\alpha(P)=3.96\times 10^{-5}$ 6 Mult.: A ₂ /A ₀ >0.
180.7	4	3616.0+x	14 ⁺	3435.3+x	13 ⁻	[E1]	0.1051 15	$\alpha(K)=0.0846$ 12; $\alpha(L)=0.01564$ 22; $\alpha(M)=0.00369$ 5 $\alpha(N)=0.000940$ 13; $\alpha(O)=0.0001899$ 27; $\alpha(P)=2.214\times 10^{-5}$ 31
213.7	10	4822.9+x	(20 ⁺)	4609.2+x	(18 ⁺)	(E2)	0.375 5	$\alpha(K)=0.1441$ 20; $\alpha(L)=0.1713$ 24; $\alpha(M)=0.0452$ 6 $\alpha(N)=0.01158$ 16; $\alpha(O)=0.002233$ 31; $\alpha(P)=0.0002122$ 30 Mult.: A ₂ /A ₀ >0.
310.8	2	4923.5+x	(19 ⁺)	4612.7+x	18 ⁺	(M1)	0.459 6	$\alpha(K)=0.373$ 5; $\alpha(L)=0.0652$ 9; $\alpha(M)=0.01536$ 22 $\alpha(N)=0.00395$ 6; $\alpha(O)=0.000828$ 12;

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¹⁹⁶Pt(¹²C,6n γ) **1990Fa03 (continued)**

γ (²⁰²Po) (continued)

<u>Eγ</u> [†]	<u>Iγ</u> [†]	<u>E_i(level)</u>	<u>Jπ_i</u>	<u>E_f</u>	<u>Jπ_f</u>	<u>Mult.</u> [‡]	<u>α#</u>	<u>Comments</u>
365.8	5	5188.7+x	(22 ⁺)	4822.9+x	(20 ⁺)	(E2)	0.07141 99	α (P)=0.0001070 15 Mult.: A ₂ /A ₀ <0. α (K)=0.0431 6; α (L)=0.02120 30; α (M)=0.00544 8 α (N)=0.001398 20; α (O)=0.000275 4; α (P)=2.84×10 ⁻⁵ 4
386.0	13	2604.2+x	11 ⁻	2218.1+x	9 ⁻	E2	0.0617 9	Mult.: A ₂ /A ₀ >0. α (K)=0.0383 5; α (L)=0.01755 25; α (M)=0.00449 6 α (N)=0.001153 16; α (O)=0.0002273 32; α (P)=2.376×10 ⁻⁵ 33
436.4	21	3040.6+x	12 ⁺	2604.2+x	11 ⁻	E1	0.01366 19	Mult.: A ₂ =0.37 5, A ₄ =-0.17 7. α (K)=0.01122 16; α (L)=0.001868 26; α (M)=0.000437 6 α (N)=0.0001118 16; α (O)=2.302×10 ⁻⁵ 32; α (P)=2.84×10 ⁻⁶ 4
443.0	89	1691.7	6 ⁺	1248.7	4 ⁺	E2	0.0432 6	Mult.: A ₂ =-0.04 4, A ₄ =0.12 5. α (K)=0.0285 4; α (L)=0.01102 15; α (M)=0.00279 4 α (N)=0.000717 10; α (O)=0.0001423 20; α (P)=1.527×10 ⁻⁵ 21
455.2	26	4071.2+x	16 ⁺	3616.0+x	14 ⁺	E2	0.0404 6	Mult.: A ₂ =0.14 1, A ₄ =0.03 3. α (K)=0.0269 4; α (L)=0.01008 14; α (M)=0.00255 4 α (N)=0.000655 9; α (O)=0.0001301 18; α (P)=1.403×10 ⁻⁵ 20
470.4	3	5293.3+x	(21 ⁺)	4822.9+x	(20 ⁺)	(M1)	0.1499 21	Mult.: A ₂ =0.42 3, A ₄ =-0.06 6. α (K)=0.1222 17; α (L)=0.02112 30; α (M)=0.00497 7 α (N)=0.001279 18; α (O)=0.000268 4; α (P)=3.46×10 ⁻⁵ 5
526.4	44	2218.1+x	9 ⁻	1691.7+x	8 ⁺	E1	0.00924 13	Mult.: A ₂ =-0.33 23, A ₄ =0.19 30. α (K)=0.00761 11; α (L)=0.001244 17; α (M)=0.000291 4 α (N)=7.44×10 ⁻⁵ 10; α (O)=1.536×10 ⁻⁵ 22; α (P)=1.913×10 ⁻⁶ 27
537.7	17	3435.3+x	13 ⁻	2897.5+x	11 ⁻	E2	0.0271 4	Mult.: A ₂ =-0.09 2, A ₄ =0.08 4. α (K)=0.01910 27; α (L)=0.00599 8; α (M)=0.001497 21 α (N)=0.000385 5; α (O)=7.70×10 ⁻⁵ 11; α (P)=8.57×10 ⁻⁶ 12
538.0	11	4609.2+x	(18 ⁺)	4071.2+x	16 ⁺	(E2)	0.0270 4	Mult.: A ₂ =0.38 3, A ₄ =-0.01 5. Doublet with 538.0 γ . α (K)=0.01908 27; α (L)=0.00598 8; α (M)=0.001495 21 α (N)=0.000384 5; α (O)=7.69×10 ⁻⁵ 11; α (P)=8.55×10 ⁻⁶ 12
541.5	4	4612.7+x	18 ⁺	4071.2+x	16 ⁺	E2	0.0266 4	Mult.: A ₂ =0.38 3, A ₄ =-0.01 5. Doublet with 537.7 γ . α (K)=0.01883 26; α (L)=0.00586 8; α (M)=0.001465 21 α (N)=0.000376 5; α (O)=7.54×10 ⁻⁵ 11; α (P)=8.40×10 ⁻⁶ 12
571.5	86	1248.7	4 ⁺	677.2	2 ⁺	E2	0.02353 33	Mult.: A ₂ =0.21 18, A ₄ =0.03 30. α (K)=0.01689 24; α (L)=0.00500 7; α (M)=0.001244 17 α (N)=0.000320 4; α (O)=6.42×10 ⁻⁵ 9;

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$^{196}\text{Pt}(^{12}\text{C},6n\gamma)$ **1990Fa03 (continued)** $\gamma(^{202}\text{Po})$ (continued)

E_γ †	I_γ †	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. ‡	α #	Comments
575.5	31	3616.0+x	14 ⁺	3040.6+x	12 ⁺	E2	0.02316 32	$\alpha(\text{P})=7.22\times 10^{-6}$ 10 Mult.: $A_2=0.22$ 2, $A_4=0.05$ 3. $\alpha(\text{K})=0.01666$ 23; $\alpha(\text{L})=0.00490$ 7; $\alpha(\text{M})=0.001219$ 17 $\alpha(\text{N})=0.000313$ 4; $\alpha(\text{O})=6.29\times 10^{-5}$ 9; $\alpha(\text{P})=7.08\times 10^{-6}$ 10
600.4	1	5209.6+x	(20 ⁺)	4609.2+x	(18 ⁺)	(E2)	0.02106 29	Mult.: $A_2=0.40$ 3, $A_4=-0.02$ 5. $\alpha(\text{K})=0.01531$ 21; $\alpha(\text{L})=0.00433$ 6; $\alpha(\text{M})=0.001075$ 15 $\alpha(\text{N})=0.000276$ 4; $\alpha(\text{O})=5.56\times 10^{-5}$ 8; $\alpha(\text{P})=6.31\times 10^{-6}$ 9
667.6	2	4738.8+x	18 ⁺	4071.2+x	16 ⁺	E2	0.01670 23	Mult.: $A_2=0.17$ 11, $A_4=0.02$ 14. $\alpha(\text{K})=0.01243$ 17; $\alpha(\text{L})=0.00323$ 5; $\alpha(\text{M})=0.000794$ 11 $\alpha(\text{N})=0.0002039$ 29; $\alpha(\text{O})=4.13\times 10^{-5}$ 6; $\alpha(\text{P})=4.76\times 10^{-6}$ 7
677.2	100	677.2	2 ⁺	0	0 ⁺	E2	0.01620 23	Mult.: $A_2=0.45$ 8, $A_4=-0.02$ 12. $\alpha(\text{K})=0.01210$ 17; $\alpha(\text{L})=0.00310$ 4; $\alpha(\text{M})=0.000763$ 11 $\alpha(\text{N})=0.0001960$ 27; $\alpha(\text{O})=3.97\times 10^{-5}$ 6; $\alpha(\text{P})=4.59\times 10^{-6}$ 6
679.4	39	2897.5+x	11 ⁻	2218.1+x	9 ⁻	E2	0.01609 23	Mult.: $A_2=0.19$ 1, $A_4=0.06$ 2. $\alpha(\text{K})=0.01202$ 17; $\alpha(\text{L})=0.00308$ 4; $\alpha(\text{M})=0.000756$ 11 $\alpha(\text{N})=0.0001942$ 27; $\alpha(\text{O})=3.93\times 10^{-5}$ 6; $\alpha(\text{P})=4.55\times 10^{-6}$ 6
706.0	2	5528.9+x		4822.9+x	(20 ⁺)			Mult.: $A_2=0.36$ 3, $A_4=-0.01$ 5.
912.5	29	2604.2+x	11 ⁻	1691.7+x	8 ⁺	E3	0.02140 30	$\alpha(\text{K})=0.01515$ 21; $\alpha(\text{L})=0.00470$ 7; $\alpha(\text{M})=0.001179$ 17 $\alpha(\text{N})=0.000304$ 4; $\alpha(\text{O})=6.15\times 10^{-5}$ 9; $\alpha(\text{P})=7.08\times 10^{-6}$ 10 Mult.: $A_2=0.22$ 3, $A_4=0.08$ 5.

† From 1990Fa03. No uncertainties were given by the authors.

‡ From 1990Fa03 based on $\gamma(\theta)$, unless otherwise stated.

Additional information 2.

$^{196}\text{Pt}(^{12}\text{C},6n\gamma) \quad ^{1990}\text{Fa03}$

Level Scheme
Intensities: Relative I_γ

Legend

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

