^{9}Be(^{208}Pb,Xγ) 2005Ca02,2011St21

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 192,1 (2023)	1-Aug-2023

2005Ca02: ^{200}Pt nuclide produced by in-flight fragmentation of 1 GeV/A ^{208}Pb beam on a 1.6 g/cm^2 beryllium target at the GSI UNILAC accelerator complex; Detectors: Fragment Mass Separator, four HpGe (clover) detectors located at the focal plane, multi-wire proportional counters and two scintillation detectors; Measured: Eγ, Iγ, $\gamma\gamma$ coin., γ(t). Others (the same collaboration): 2003Po14, 2001Ca13, 2001Ca14, 2001Pf03.

2011St21: ^{200}Pt nuclide produced by in-flight fragmentation of 1 GeV/A ^{208}Pb beam at the GSI UNILAC and SIS-18 accelerator complex. Target thickness=2.526 g/cm^2 beryllium, backed by a 0.223 g/cm^2 thick ^{93}Nb foil. Fragments identified by the Fragment Separator, based on time of flight, Bρ and energy loss. The ions were slowed down in Al degraders and stopped in a plastic catcher. The stopper was surrounded by the RISING γ-ray spectrometer. Measured: Eγ, Iγ, delayed γ rays, γ(t). Others (same collaboration): 2009St16, 2008StZY.

^{200}Pt Levels

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[‡]	Comments
0.0[#]	0$^+$	12.6 h *3*	T$_{1/2}$: From Adopted Levels.
470.10[#] *20*	2$^+$		
867.4 *3*	2$^+$		
1103.3[#] *3*	4$^+$		
1268.3 *3*	4$^+$		
1567.0 *3*	5$^-$		
1567.0+x	(7$^-$)	14.0 ns *6*	Additional information 1. E(level): x ≤90 keV in 2005Ca02 and x ≤50 keV in 2011St21. T$_{1/2}$: From 464γ(t) and 470γ(t) in 2005Ca02. Other: 17.0 ns *5* from γ(t) in 2011St21. The survival of this short-lived isomer through the Fragment Recoil Separator (time of flight ≈300 ns) is explained by 2005Ca02 with the suppression of the electron conversion for highly-charged ions. Experimental isomeric state population ratio ≥25% (2005Ca02) and ≥7% *4* (2011St21). Possible configuration=π ($d^{-1}_{3/2}$,$h^{-1}_{11/2}$).
2275.7+x *2*	(9$^-$)		
2818.2+x *3*			
3136.6+x *3*			
<3226.6+x	(12$^+$)	13.4 ns *10*	Additional information 2. J$^\pi$: From systematics of similar structures in neighboring nuclei, as suggested in 2005Ca02. T$_{1/2}$: Weighted average of 10.3 ns *24* (2005Ca02) and 13.9 ns *10* (2011St21). The survival of this short-lived isomer through the Fragment Recoil Separator (time of flight ≈300 ns) is explained by 2005Ca02 with the suppression of the electron conversion for highly-charged ions. Experimental isomeric state population ratio ≥4% (2005Ca02) and ≥2% *1* (2011St21). Possible configuration=ν ($i^{-2}_{13/2}$).

[†] From a least-squares fit to Eγ.
[‡] From 2005Ca02, unless otherwise stated.
[#] Band(A): Ground-state, K^π=0$^+$ band.

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$\gamma(^{200}Pt)$

E_γ [†]	I_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	Comments
x		1567.0+x	(7^-)	1567.0	5^-	E_γ: x ≤90 keV in 2005Ca02 and x ≤50 keV in 2011St21.
(<90)		<3226.6+x	(12^+)	3136.6+x		E_γ: An upper limit suggested in 2005Ca02.
298.9 *2*	109 *13*	1567.0	5^-	1268.3	4^+	I_γ: 92 *23* in 2011St21.
318.4[‡] *2*	196 *13*	3136.6+x		2818.2+x		I_γ: 184 *23* in 2011St21.
397.5 *2*	72 *10*	867.4	2^+	470.10	2^+	I_γ: 92 *23* in 2011St21.
401.0 *2*	72 *10*	1268.3	4^+	867.4	2^+	I_γ: 92 *23* in 2011St21.
463.6 *2*	903 *22*	1567.0	5^-	1103.3	4^+	I_γ: 828 *35* in 2011St21.
470.1 *2*	1000 *23*	470.10	2^+	0.0	0^+	
542.5[‡] *2*	137 *10*	2818.2+x		2275.7+x	(9^-)	I_γ: 195 *23* in 2011St21.
633.0 *2*	925 *24*	1103.3	4^+	470.10	2^+	I_γ: 1149 *46* in 2011St21.
708.6[‡] *2*	199 *14*	2275.7+x	(9^-)	1567.0+x	(7^-)	I_γ: 253 *35* in 2011St21.

[†] From 2005Ca02, unless otherwise stated. Iγ normalized to Iγ(470γ)=1000.

[‡] The ordering is uncertain. The 318γ-543γ-709γ cascade is tentatively placed above the (7^-) isomer by 2005Ca02, while the 708γ-542γ-317γ cascade is placed above the 5^- level by 2001Ca14.

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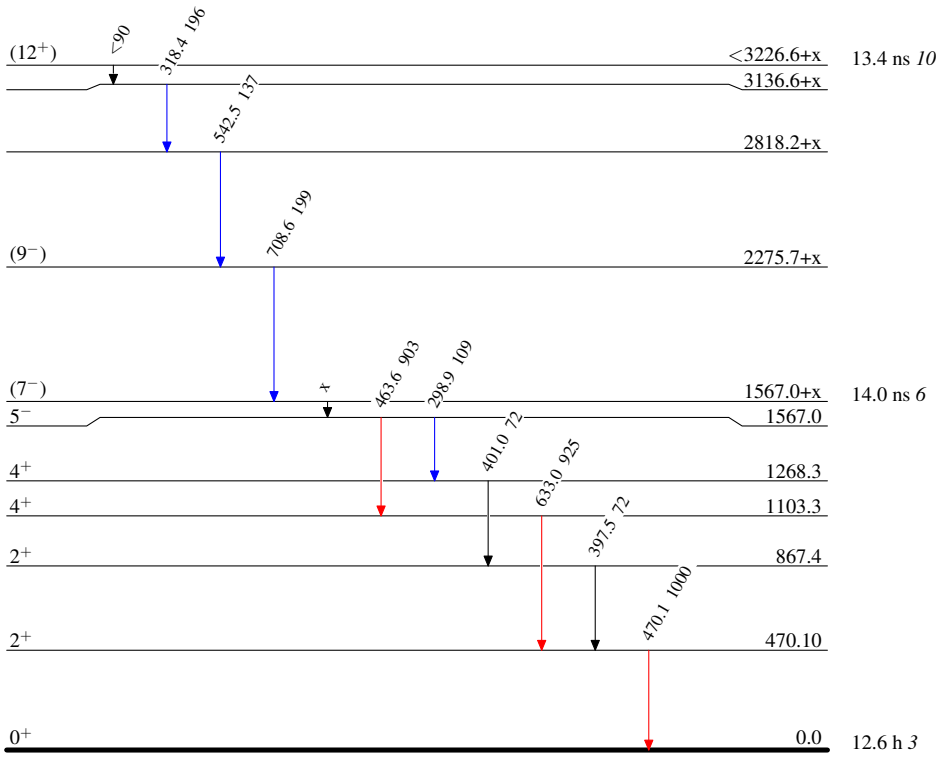
Level Scheme

Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



$^{200}_{78}Pt_{122}$

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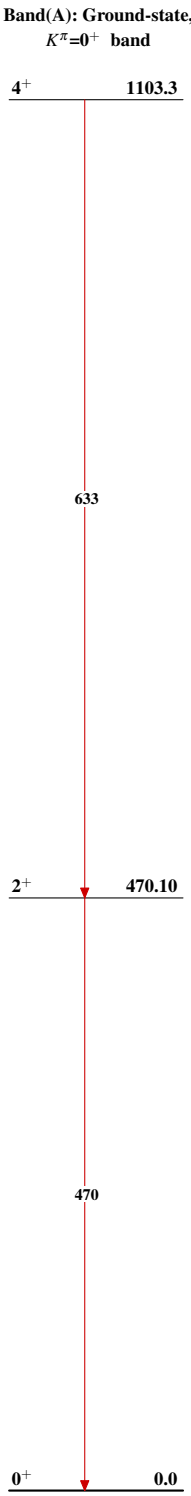

$^{200}_{78}Pt_{122}$