^{194}Pt(p,nγ) 1977Pa20

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 177, 1 (2021)	3-Sep-2021

Includes ^{194}Pt(d,2nγ) from 1975Ya14.

1977Pa20: E=12-20 MeV proton beams were produced from the 90-cm MC-20 cyclotron at University of Jyvaskyla. Target was 11 mg/cm^2 97.3% enriched ^{195}Pt. γ rays were detected with Ge(Li) and HPGe detectors. Measured Eγ, Iγ, γγ-coin, γ(θ), γ(t). Deduced levels, $T_{1/2}$. 1977Pa20 also measured conversion electrons from decays of ^{194}Au isomers using a cooled silicon surface-barrier detector and deduced conversion coefficients and γ-ray multipolarities. See ^{194}Au IT decay for more details. 1977Pa20 also report Iγ data from ^{195}Pt(p,2nγ).

Others: 1975Ya14, 1953He57.

All data are from 1977Pa20, unless otherwise noted.

^{194}Au Levels

A tentative level proposed by 1977Pa20 at 804 keV is discarded here as 1977Pa20 cited 1975La21 work for observing 365γ-194γ coincidence, but 1975La21 assigned that coincidence in ^{192}Au, not ^{194}Au.

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
0.0	1^-	107.4 *5*	(5^+)	406.8 *6*	(8^+)	535.7 *6*	(9^+)
35.19 *7*	$(2)^-$	244.6 *6*	(7^+)	439.4 *6*	(9^+)	609.1 *6*	(9^+)
80.51 *10*	$(3)^-$	278.2 *6*	(6^+)	475.8 *9*	(11^-)	720.0 *6*	(9)

† From a least-squares fit to γ-ray energies.

‡ From Adopted Levels.

γ(^{194}Au)

Eγ†	Iγ‡	Ei(level)	J_i^π	E_f	J_f^π	Mult.	Comments
(26.9 *5*)		107.4	(5^+)	80.51	$(3)^-$		Eγ: from ce data (1977Pa20).
(33.6)		278.2	(6^+)	244.6	(7^+)		
35.19 *7*	83 *16*	35.19	$(2)^-$	0.0	1^-		
45.32 *7*	150 *20*	80.51	$(3)^-$	35.19	$(2)^-$		
(69.0 *7*)		475.8	(11^-)	406.8	(8^+)	[E3]	Eγ: from ce data (1977Pa20).
x82.63 *12*	19 *2*						
x86.57 *12*	7.8 *18*						
x93.65 *12*	3.5 *15*						
x96.73 *10*	67 *5*						
x97.72 *12*	10 *2*						
x111.67 *15*	26 *4*						
x119.43 *10*	47 *4*						
x127.9 *2*	56 *6*						
128.58 *10*	6 *3*	406.8	(8^+)	278.2	(6^+)		
x133.43 *15*	21 *3*						
137.16 *10*	100	244.6	(7^+)	107.4	(5^+)		
x138.87 *12*	10 *2*						
x144.31 *15*	4 *2*						
x145.39 *15*	6 *2*						
162.22 *12*	<3	406.8	(8^+)	244.6	(7^+)		
x166.55# *18*	40# *5*						
x169.22 *10*	188 *15*						
170.78 *10*	130 *11*	278.2	(6^+)	107.4	(5^+)		
x172.27 *15*	53 *10*						

Continued on next page (footnotes at end of table)

^{194}Pt(p,nγ) 1977Pa20 (continued)

γ(^{194}Au) (continued)

E_γ †	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π
x177.29 *18*	<10				
x183.59 *12*	<8				
194.83# *12*	15# *3*	439.4	(9+)	244.6	(7+)
x200.34@ *18*	16@ *3*				
x207.35@ *15*	≈20@				
x211.52@ *15*	<10@				
x219.32@ *16*	53@ *8*				
x220.76 *18*	28 *4*				
x223.9 *2*	13 *3*				
x225.1 *2*	16 *3*				
x239.4@ *2*	29@ *4*				
x245.36 *16*	34 *5*				
x287.06@ *18*	≈65@				
291.09 *15*	<10	535.7	(9+)	244.6	(7+)
x298.72 *15*	24 *3*				
x310.2 *2*	10 *3*				
x312.0 *2*	15 *4*				
313.2 *2*	<10	720.0	(9)	406.8	(8+)
x325.93 *16*	15 *4*				
x330.15 *18*	<10				
x338.64 *16*	60 *15*				
x344.02 *18*	50 *15*				
x355.67 *15*	2.5×10^2 *3*				
364.54 *18*	<20	609.1	(9+)	244.6	(7+)
x368.16@ *18*	≈50@				
x387.75 *18*	<15				
x394.74@ *18*	<20@				

† The same values are also presented in ^{195}Pt(p,2nγ) dataset (1977Pa20).
‡ Relative intensity with respect to I(137γ)=100, measured at θ=125° (1977Pa20).
# Complex peak (1977Pa20).
@ Complex peak, intensity corrected for contributions from other nuclides (1977Pa20).
x γ ray not placed in level scheme.

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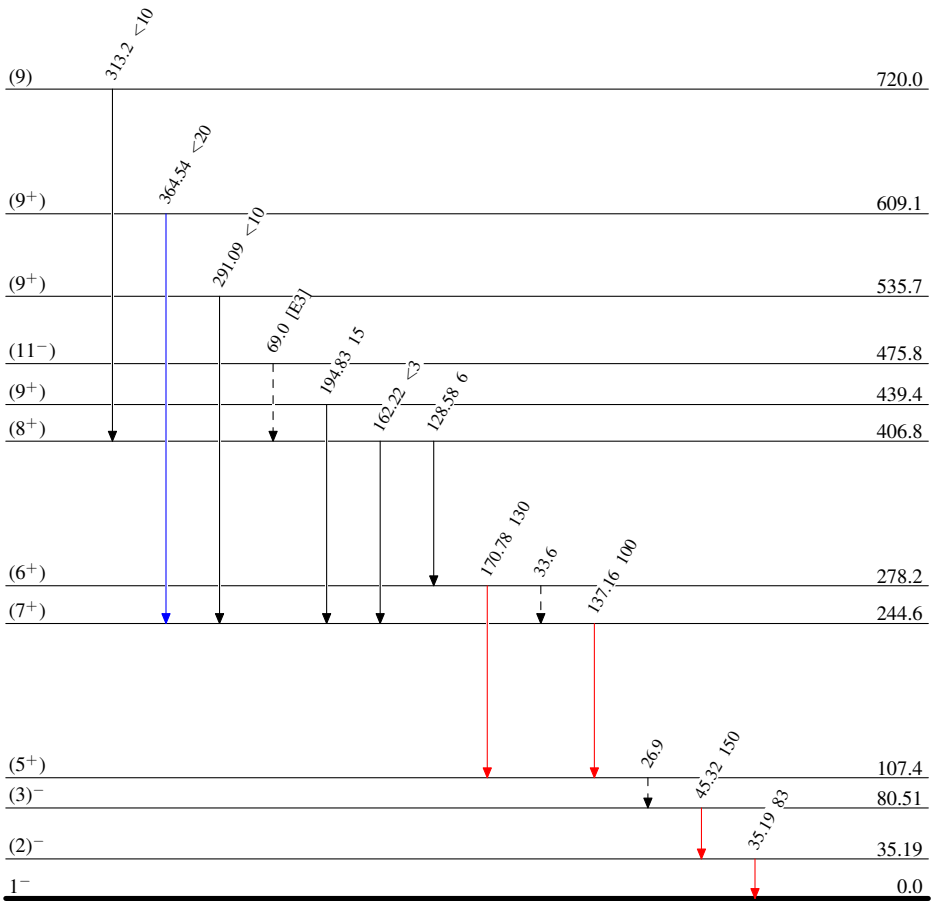
Level Scheme

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)



$^{194}_{79}Au_{115}$