^{192}Os(α,3nγ) 1977Sa01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 143, 1 (2017)	31-Mar-2017

1977Sa01: E(α)=31-46 MeV, θ=90° to 140° (5 angles used); enriched (98%) ^{192}Os targets; measured Eγ, Iγ, γγ, γγ(t), excit; interpreted level structure in terms of the triaxial rotor plus hole model.

1976Pi03, 1975Pi02: E(α)=30-50 MeV, measured γ, γγ, γ(θ), γ(t). All high-spin states which are strongly populated in the (α,3n) reaction deexcited by γ cascades leading to the 4.3-day 13/2$^+$ isomer. No other isomeric states observed.

^{193}Pt Levels

E(level)	J$^\pi$†	$T_{1/2}$	Comments
0.0			
1.64‡			
14.28‡			
149.8‡#	13/2$^+$	4.33 d *3*	$T_{1/2}$: From Adopted Levels.
199.0@	11/2$^+$		
491.0#	17/2$^+$		
519.6@	15/2$^+$		
603.3	15/2$^+$		
907.4	(17/2$^+$)		
980.5@	19/2$^+$		
1003.4#	21/2$^+$		
1103.5			
1159.9	19/2$^+$		
1320.8&	21/2$^{(-)}$		
1454.7&	25/2$^{(-)}$	3.2 ns *3*	$T_{1/2}$: weighted average of 3.26 ns *34* (Ce(t) (1978Ti02)) and 3.1 ns *5* (γ(t) (1977Sa01)).
1510.3			
1631.8#	25/2$^+$		
1689.9&	27/2$^{(-)}$		
1776.8			
1986.7?			
1992.2&	29/2$^{(-)}$		
2335.2#	29/2$^+$		
2696.2#	33/2$^+$		
3129.2#	(37/2$^+$)		

† From γ-ray multipolarities and fits of coincident γ rays into expected bands (1977Sa01).
‡ Rounded-off value from Adopted Levels.
# Band(A): i13/2 favored decoupled band, Configuration=$(\nu\ i_{13/2})^{-1}$.
@ Band(B): (J-1) unfavored, decoupled band from Configuration=$(\nu\ i_{13/2})^{-1}$.
& Band(C): 21/2$^-$ semidecoupled band; Position and spacing are similar to corresponding band structure in other odd-mass Pt and Hg nuclei. These bands are related to the 5$^-$ bands in neighboring even-mass nuclei.

$^{192}Os(\alpha,3n\gamma)$ 1977Sa01 (continued)

$\gamma(^{193}Pt)$

All data are from 1977Sa01, unless otherwise noted.

E_γ	I_γ†	E_i(level)	J^π_i	E_f	J^π_f	Mult.‡	Comments
(1.642# 2)		1.64		0.0			
(12.634# 8)		14.28		1.64			
49.2	14 4	199.0	11/2$^+$	149.8	13/2$^+$		
133.9 2	257 15	1454.7	25/2$^{(-)}$	1320.8	21/2$^{(-)}$	Q	A_2=+0.33 6; A_4=−0.09 7
(135.50# 3)		149.8	13/2$^+$	14.28			
^{x}159.7 3	19 3						A_2=−0.10 8
161.0 2	96 9	1320.8	21/2$^{(-)}$	1159.9	19/2$^+$	D,D+Q	A_2=−0.18 6; A_4=+0.02 7
^{x}168.8 3	14 3						A_2=−0.62 16
189.5 2	55 7	1510.3		1320.8	21/2$^{(-)}$		A_2=−0.04 6; A_4=+0.06 7
^{x}216.1 3	17 3						
235.2 1	159 13	1689.9	27/2$^{(-)}$	1454.7	25/2$^{(-)}$	D,D+Q	A_2=−0.05 6; A_4=0.00 7
^{x}255.4 3	19 4						
^{x}264.1 2	85 9					(Q)	A_2=+0.35 7; A_4=+0.01 8
266.5 3	20 4	1776.8		1510.3		(Q)	A_2=+0.57 21
296.8@ 3	32 5	1986.7?		1689.9	27/2$^{(-)}$		
302.3 2	23 4	1992.2	29/2$^{(-)}$	1689.9	27/2$^{(-)}$		
304.0 2	37 5	907.4	(17/2$^+$)	603.3	15/2$^+$	D,D+Q	A_2=−0.75 11; A_4=+0.10 12
(317)		1320.8	21/2$^{(-)}$	1003.4	21/2$^+$		Transition, if present, obscured by 316.5γ in ^{192}Pt.
320.6 1	542 38	519.6	15/2$^+$	199.0	11/2$^+$	Q	A_2=+0.29 6; A_4=−0.07 7
^{x}335.1 2	23 4						
340.3 2	747 75	1320.8	21/2$^{(-)}$	980.5	19/2$^+$	D,D+Q	A_2=−0.16 8; A_4=−0.01 9
341.2 2	1000	491.0	17/2$^+$	149.8	13/2$^+$	Q	A_2=+0.23 8; A_4=−0.04 9
361.0 3	41 6	2696.2	33/2$^+$	2335.2	29/2$^+$	Q	A_2=+0.31 7
369.8 1	150 12	519.6	15/2$^+$	149.8	13/2$^+$	D+Q	A_2=−0.73 6; A_4=+0.08 7
377.3 2	58 7	980.5	19/2$^+$	603.3	15/2$^+$	Q	A_2=+0.31 8; A_4=−0.06 9
387.9 2	42 6	907.4	(17/2$^+$)	519.6	15/2$^+$	D+Q	A_2=−0.36 13; A_4=+0.06 15
^{x}413.1 3	20 4						A_2=+0.29 12
416.5 2	50 7	907.4	(17/2$^+$)	491.0	17/2$^+$		A_2=+0.28 9
^{x}425.1 4	11 2						
433.0 3	23 4	3129.2	(37/2$^+$)	2696.2	33/2$^+$		
^{x}447.3 2	60 7						A_2=+0.22 11
453.5 1	238 19	603.3	15/2$^+$	149.8	13/2$^+$	D+Q	A_2=−0.72 6; A_4=+0.09 7
461.0 1	501 35	980.5	19/2$^+$	519.6	15/2$^+$	Q	A_2=+0.30 6; A_4=−0.08 7
^{x}474.1 2	92 9						A_2=−0.07 8; A_4=−0.01 9
^{x}478.2 3	26 5						A_2=+0.46 23
489.5 1	346 28	980.5	19/2$^+$	491.0	17/2$^+$	D+Q	A_2=−0.74 8; A_4=+0.11 10
500.2 3	28 5	1103.5		603.3	15/2$^+$	D,D+Q	A_2=−0.44 17
^{x}503.6 3	33 6						
512.4 3	350 53	1003.4	21/2$^+$	491.0	17/2$^+$		
^{x}518.4 4	16 4						
537.4 2	142 17	1992.2	29/2$^{(-)}$	1454.7	25/2$^{(-)}$	Q	A_2=+0.40 10; A_4=−0.12 11
^{x}547.2 3	31 6					D,D+Q	A_2=−1.0 3
556.5 3	77 10	1159.9	19/2$^+$	603.3	15/2$^+$	(Q)	A_2=+0.23 13; A_4=−0.03 15
^{x}595.7 3	49 8						A_2=+0.52 22
628.4 2	228 23	1631.8	25/2$^+$	1003.4	21/2$^+$	Q	A_2=+0.36 7; A_4=−0.11 8
640.2 4	34 7	1159.9	19/2$^+$	519.6	15/2$^+$	(Q)	A_2=+0.33 17
669.1 3	117 17	1159.9	19/2$^+$	491.0	17/2$^+$	D,D+Q	A_2=−0.60 9; A_4=+0.19 11
703.4 3	121 18	2335.2	29/2$^+$	1631.8	25/2$^+$	Q	A_2=+0.40 8; A_4=−0.13 10

† Relative intensities at E(α)=35.0 MeV and θ=125°.

Continued on next page (footnotes at end of table)

^{192}Os(α,3nγ) 1977Sa01 (continued)

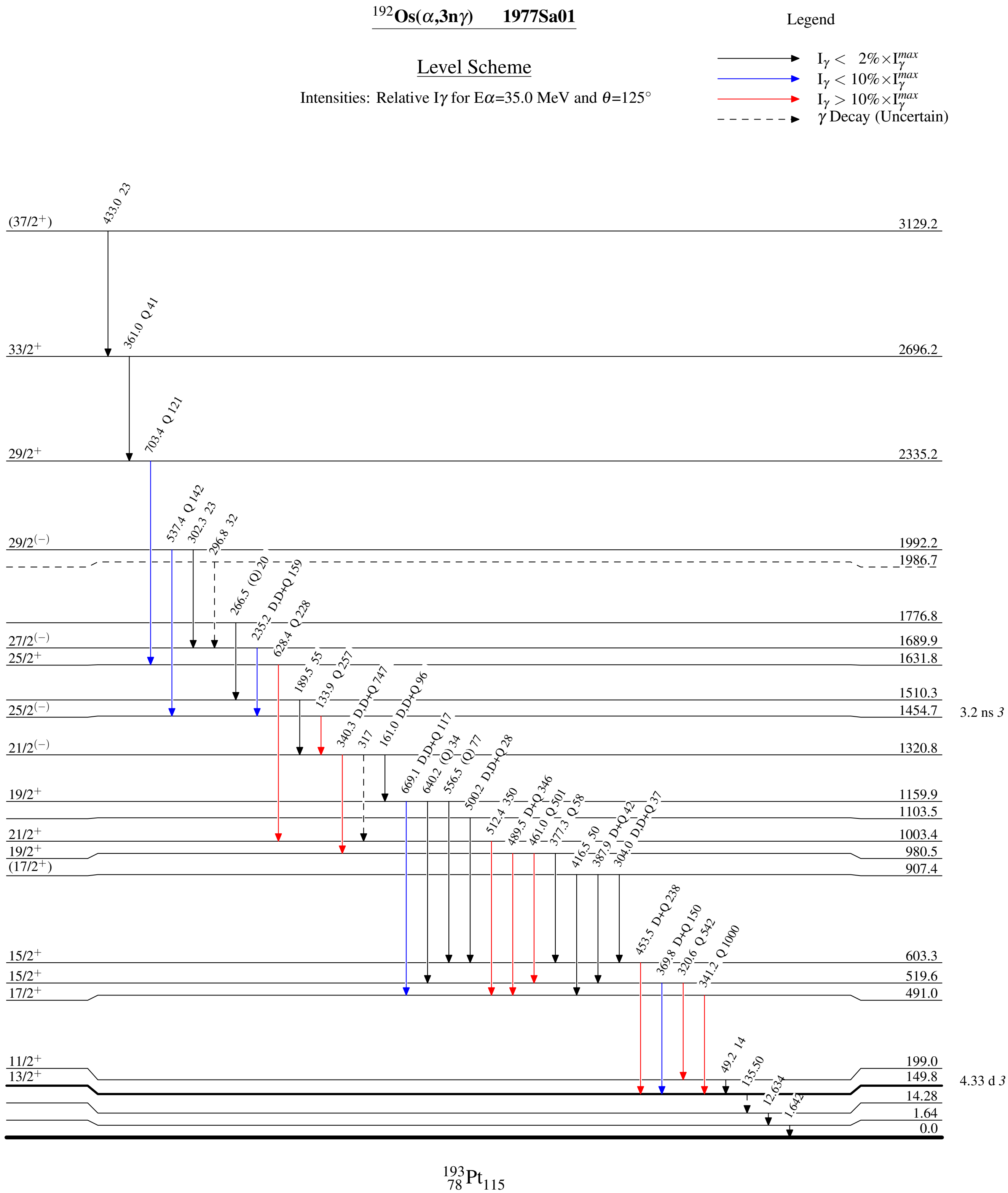
γ(^{193}Pt) (continued)

‡ From $\gamma(\theta)$ in 1977Sa01; mult=Q assignments are based on positive A_2 and corresponds to $\Delta J=2$, stretched quadrupole (most likely E2); Mult= D or D+Q assignments are based on negative A_2 and corresponds to $\Delta J=1$ or 0.
# From ^{193}Pt IT decay (4.33 d).
@ Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

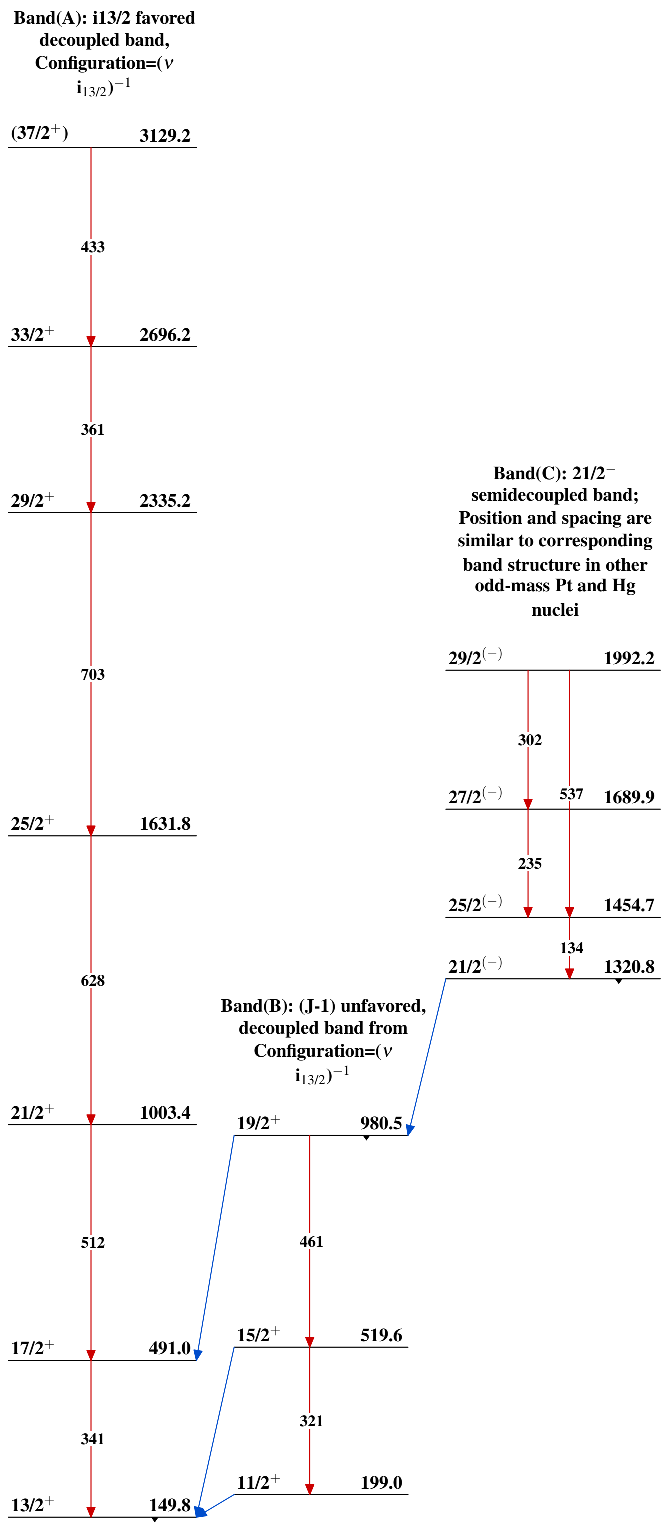
$^{192}Os(\alpha,3n\gamma)$ 1977Sa01

Level Scheme

Intensities: Relative Iγ for Eα=35.0 MeV and θ=125°



$^{192}Os(\alpha,3n\gamma)$ 1977Sa01



$^{193}_{78}Pt_{115}$