^{186}W(^{11}B,4nγ) 2007Ok05

History

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

Target: ^{186}W foil (thickness 300 μg/cm^2); Projectile: ^{11}B, E=68 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$(DCO), γ(lin pol) using the YRAST Ball array of seven Clover Ge detectors, 16 single Ge detectors and three LEPs detectors. Deduce level scheme, spin and parity.

^{193}Au Levels

E(level)[†]	J$^\pi$	T$_{1/2}$[‡]	Comments
290.20[&] *3*	11/2$^-$	3.9 s *3*	
698.2[&] *5*	15/2$^-$		
790.4[#] *5*	9/2$^-$		
1106.9[@] *7*	11/2$^-$		E(level): Level energy corrected in erratum.
1197.1[#] *11*	13/2$^-$		
1419.7[&] *7*	19/2$^-$		
1522.4[@] *12*	15/2$^-$		E(level): Level energy corrected in erratum.
1711.6[#] *14*	17/2$^-$		
1948.1[c] *9*	21/2$^+$		
2081.2[c] *10*	25/2$^+$		
2100.9[@] *15*	(19/2$^-$)		E(level): Level energy corrected in erratum.
2173.5[&] *9*	23/2$^-$		
2322.9[#] *16*	21/2$^-$		
2326.3[c] *11*	29/2$^+$		
2378.4[&] *10*	27/2$^-$		Terminating state, configuration=$\pi h^{-1}_{11/2}\otimes 8^+$ or 10^+ isomer in the core nucleus ^{194}Hg.
2477.0[&] *11*	31/2$^-$		Configuration=$\pi h^{-1}_{11/2}\otimes\nu i^{-2}_{13/2}$.
2488.1[b] *12*	31/2$^+$		
2701.5[a] *12*	33/2$^-$		
2925.0[b] *13*	35/2$^+$		
3155.9[a] *13*	(37/2$^-$)		
3444.4[b] *14*	39/2$^+$		
3897.0[a] *14*	(41/2$^-$)		
4066.5[b] *15*	43/2$^+$		
4351.6[b] *16*	47/2$^+$		
4702.0[a] *15*	(45/2$^-$)		
5061.9[b] *19*	51/2$^+$		
5232.7[a] *17*	(49/2$^-$)		
5744.7[b] *21*	55/2$^+$		

[†] From least-squares fit to Eγ's.
[‡] From Adopted Levels.
[#] Band(A): h$_{9/2}$ band, α=+1/2.
[@] Band(a): h$_{9/2}$ band, α=−1/2. 215.3γ in 2007Ok05 has been removed in the erratum.
[&] Band(B): h$_{11/2}$ band. Decoupled favored sequence.
[a] Band(C): Band based on 33/2$^-$. Continuation of h$_{11/2}$ band after band crossing. Second band crossing occurs at $\hbar\omega\approx$0.22 MeV.
[b] Band(D): Band based on 31/2$^+$.
[c] Band(E): Band based on 21/2$^+$.

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$\gamma(^{193}Au)$

E_γ[#]	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	Comments
98.6 *5*	18.6 *3*	2477.0	31/2$^-$	2378.4	27/2$^-$		
133.1 *5*	48.7 *5*	2081.2	25/2$^+$	1948.1	21/2$^+$	Q	DCO=1.2 *4*
161.8 *5*	40.3 *3*	2488.1	31/2$^+$	2326.3	29/2$^+$	D	DCO=0.70 *18*
204.9 *5*	136.3 *7*	2378.4	27/2$^-$	2173.5	23/2$^-$	E2	DCO=1.04 *9* POL=+0.12 *15*.
224.5 *5*	109.1 *6*	2701.5	33/2$^-$	2477.0	31/2$^-$	M1+E2	DCO=0.80 *9* POL=−0.05 *10*.
245.1 *5*	47.3 *4*	2326.3	29/2$^+$	2081.2	25/2$^+$	E2	DCO=1.0 *3* POL=+0.11 *16*.
285.1 *7*	20.9 *4*	4351.6	47/2$^+$	4066.5	43/2$^+$	E2	DCO=1.14 *19* POL=+0.12 *12*.
297.2 *8*	73.1 *4*	2378.4	27/2$^-$	2081.2	25/2$^+$	E1	DCO=0.55 *9* POL=+0.12 *9*.
316.5[@] *5*	80.2 *9*	1106.9	11/2$^-$	790.4	9/2$^-$	M1+E2	DCO=0.88 *12* POL=−0.09 *7*.
406.7[@] *9*	48.4 *7*	1197.1	13/2$^-$	790.4	9/2$^-$	E2	DCO=1.2 *3* POL=+0.05 *9*.
408.0 *5*	306.5 *10*	698.2	15/2$^-$	290.20	11/2$^-$	E2[‡]	
415.5[@] *9*	32.7 *3*	1522.4	15/2$^-$	1106.9	11/2$^-$	E2	DCO=1.23 *24* POL=+0.04 *23*.
436.9 *5*	45.5 *4*	2925.0	35/2$^+$	2488.1	31/2$^+$	E2	DCO=1.14 *18* POL=+0.08 *9*.
454.4 *5*	104.9 *5*	3155.9	(37/2$^-$)	2701.5	33/2$^-$	E2	DCO=1.10 *22* POL=+0.13 *10*.
500.2 *5*	100.0 *5*	790.4	9/2$^-$	290.20	11/2$^-$	M1+E2[‡]	
514.5[@] *9*	44.2 *25*	1711.6	17/2$^-$	1197.1	13/2$^-$	E2	DCO=1.05 *24* POL=+0.14 *9*.
519.4 *5*	36.1 *5*	3444.4	39/2$^+$	2925.0	35/2$^+$	E2	DCO=1.1 *3* POL=+0.09 *15*.
528.4 *5*	122.5 *10*	1948.1	21/2$^+$	1419.7	19/2$^-$	E1	DCO=0.88 *13* POL=+0.06 *8*.
530.7 *9*	46.6 *6*	5232.7	(49/2$^-$)	4702.0	(45/2$^-$)	E2	DCO=1.05 *23* POL=+0.10 *7*.
578.5[@&] *9*	11.9 *19*	2100.9	(19/2$^-$)	1522.4	15/2$^-$	E2	DCO=1.2 *3* POL=+0.2 *3*.
611.3[@] *8*	32.9 *4*	2322.9	21/2$^-$	1711.6	17/2$^-$	E2	DCO=1.1 *3* POL=+0.02 *14*.
622.1 *5*	29.5 *6*	4066.5	43/2$^+$	3444.4	39/2$^+$	E2	DCO=1.09 *19* POL=+0.11 *9*.
682.8 *9*	9.3 *3*	5744.7	55/2$^+$	5061.9	51/2$^+$	E2	DCO=0.96 *21* POL=+0.05 *10*.
710.3 *9*	10.3 *3*	5061.9	51/2$^+$	4351.6	47/2$^+$	E2	DCO=1.0 *3* POL=+0.12 *14*.
721.5 *5*	278.6 *12*	1419.7	19/2$^-$	698.2	15/2$^-$	E2	DCO=1.07 *8* POL=+0.06 *2*.
741.1 *5*	106.8 *6*	3897.0	(41/2$^-$)	3155.9	(37/2$^-$)	E2	DCO=1.08 *13* POL=+0.13 *4*.
753.8 *5*	99.2 *6*	2173.5	23/2$^-$	1419.7	19/2$^-$	E2	DCO=1.2 *4* POL=+0.09 *17*.
805.0 *5*	81.3 *7*	4702.0	(45/2$^-$)	3897.0	(41/2$^-$)	E2	DCO=0.95 *23* POL=+0.04 *6*.

[†] DCO′s correspond to gates on ΔJ=2, quadrupole transition 408.0γ unless otherwise stated. Expected DCO=1.0 for ΔJ=2,

Continued on next page (footnotes at end of table)

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$\gamma(^{193}Au)$ (continued)

quadrupole and 0.5 for ΔJ=1, dipole or dipole+quadrupole transitions. All DCO and POL values are from erratum published by the authors of 2007Ok05.

‡ From Adopted Gammas. Used for gating and DCO analysis.

From erratum of 2007Ok05.

@ DCO corresponds to gate on ΔJ=1, M1+E2, 500.2γ.

& Placement of transition in the level scheme is uncertain.

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Level Scheme

Intensities: Relative I_γ

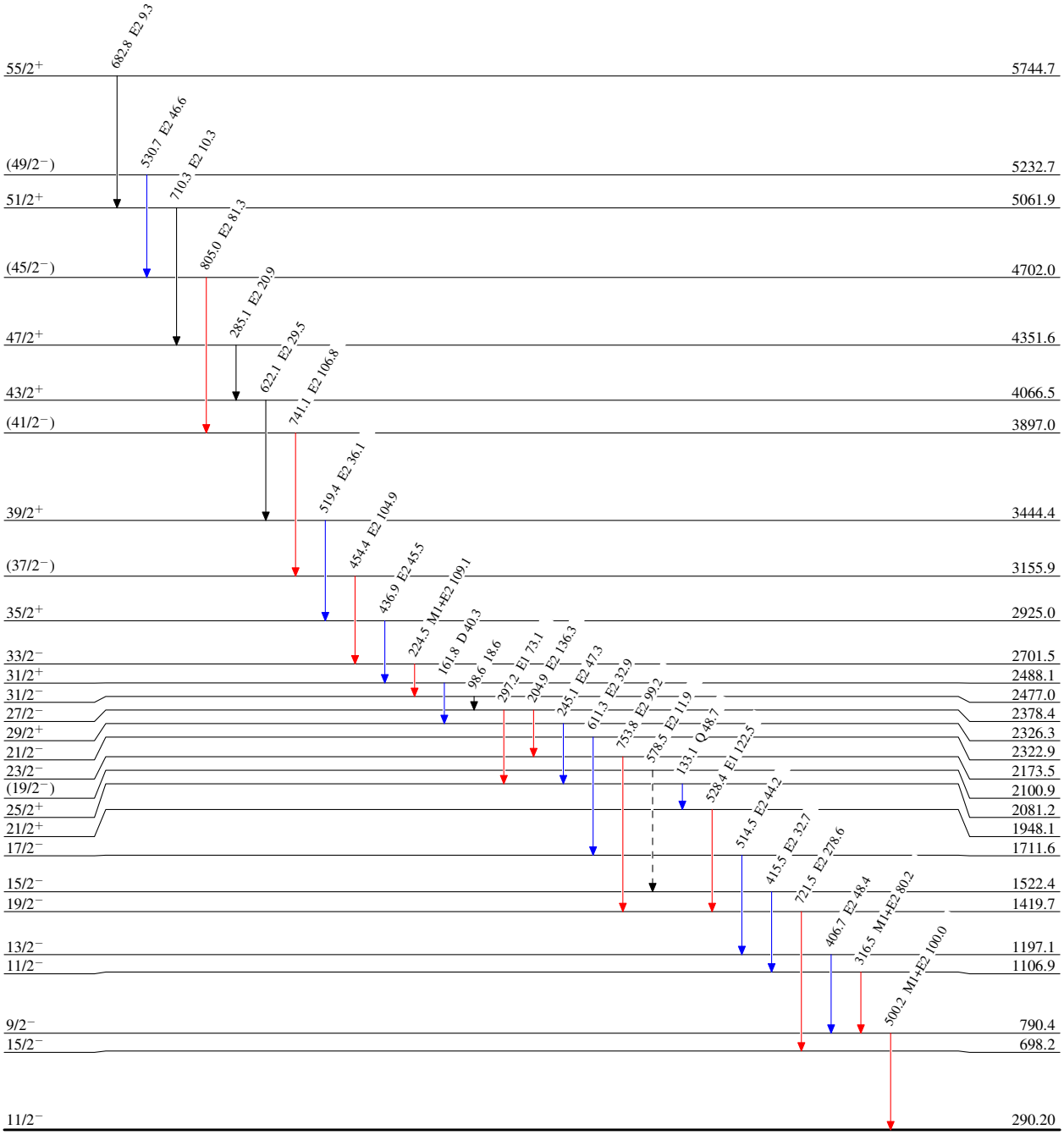
Legend

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

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

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

γ Decay (Uncertain)



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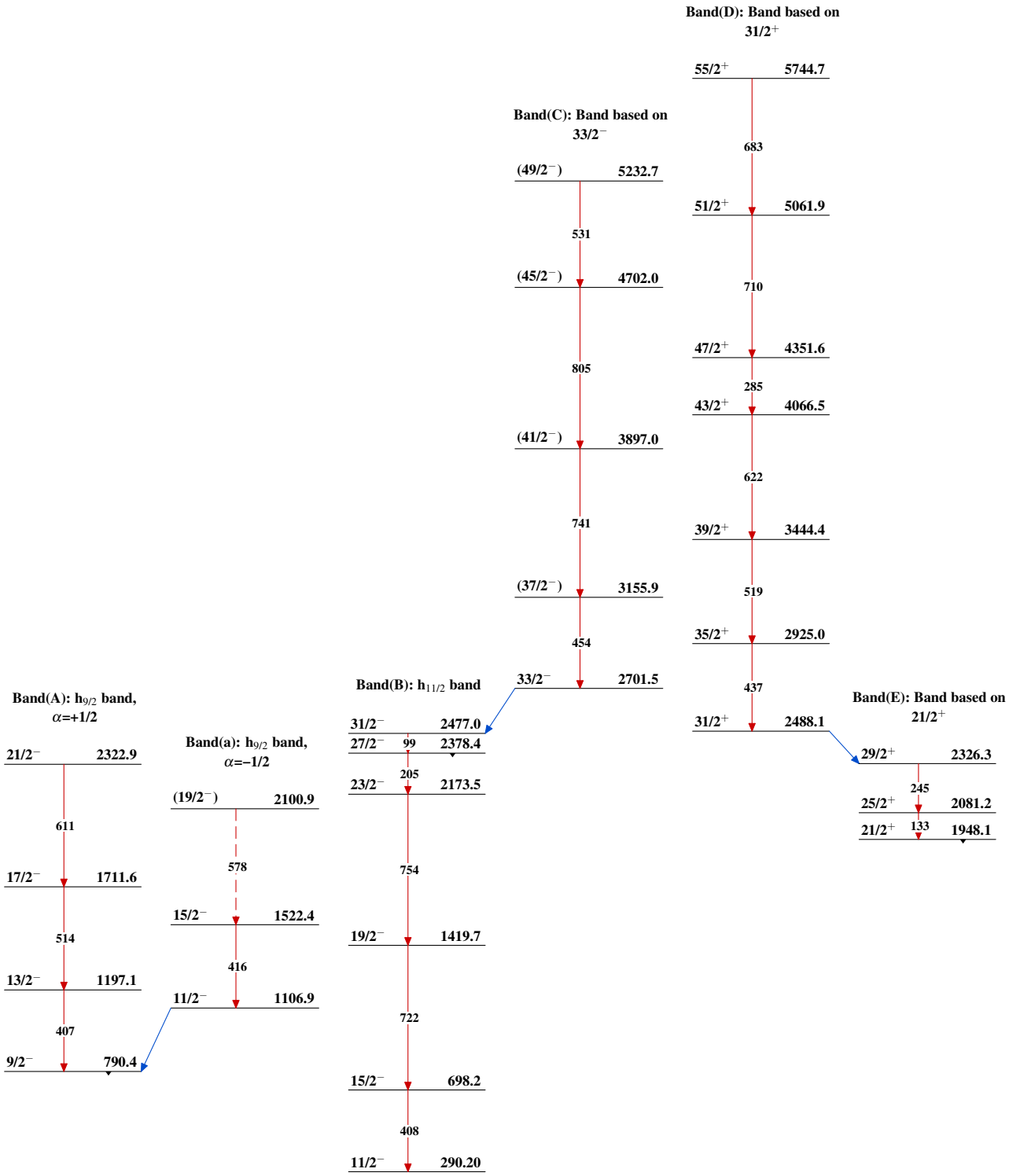

$^{193}_{79}Au_{114}$