$^{186}W(^{16}O,5n\gamma)$

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong, Zhou Chunmei	NDS 104, 283 (2005)	1-Jan-2002

1986Pa16: $^{186}W(^{16}O,5n\gamma)$ E=98 MeV, measured Eγ, Iγ, I(ce), γγ(t), γce coin.
1985Pa22: $^{186}W(^{16}O,5n\gamma)$ E=95 MeV, measured Eγ, Iγ, γ(θ), I(ce), γγ coin with Ge(Li), Si(Li), and magnetic spectrometer. Studied γ singles, γγ coin, γ(t), excitation functions, (K x ray)(γ) coin.

^{197}Pb Levels

1985Pa22 and 1978Ki05 calculated low-lying spectrum of i13/2 neutron-hole coupled to even-A core states.

E(level)[†]	Jπ[‡]	$T_{1/2}$	Comments
0.0	$3/2^-$[a]	8.1[a] min *17*	
84.90 *10*	$5/2^-$[a]		
319.30[b] *23*	$13/2^+$[a]	42.9[a] min *9*	
1325.17[b] *24*	$17/2^+$[&]		
1401.92 *24*	$15/2^+$		
1856.55 *25*	$19/2^+$[&]		
1881.9[b] *3*	$21/2^+$[&]		
1914.10 *25*	$21/2^-$	1.15[@] μs *20*	$T_{1/2}$: others: ≈0.7 μs (1978Ri01), 1.5 μs *2* (1977He06), 0.47 μs (1984AlZA), 0.47 μs *6* (1985Pa22). (32.5γ,57.4γ)(1005γ) coin observed.
2064.2 *3*	$(21/2^+)$		
2301.1 *3*	$(23/2^-)$		
2392.7 *3*	$(25/2^-)$		
2473.7 *3*	$(27/2^-)$		(K x ray,80.9γ,88.2γ)(386γ) coin observed.
2653.6 *3*	$(25/2^+)$		
2691.4 *4*	(23/2)		
3080.2 *3*	$(29/2^+)$[&]		
3168.9 *3*	$(33/2^+)$	55[#] ns *5*	$T_{1/2}$: others: 75 ns *25* (1986Pa16), 56 ns *8* (from B(E2)$(33/2^+$ to $29/2^+)$=159.5 *142*, 1986Pa16).
3314.5 *3*	(29/2)		
3756.9 *5*			

[†] From least-squares fit to Eγ′s.
[‡] From systematics of ^{197}Pb, ^{199}Pb, ^{201}Pb and weak-coupling model calculations (1985Pa22), except $3/2^-$ for g.s. and $5/2^-$ for 84.9-keV from Adopted Levels, $17/2^+$ for 1324.41-keV, $19/2^+$ for 1855.92-keV, $21/2^+$ for 1880.9-keV, $(29/2^+)$ for 3079.2-keV from γ(θ) and γ-mult (1985Pa22), except as noted.
[#] From γ(t) (1985Pa22,1984AlZA,1975Ro15).
[@] From RDM (1994Cl01).
[&] From γ(θ) and γ-mult (1985Pa22).
[a] From Adopted Levels.
[b] Band(A): ΔJ=2 level spacing is similar to ^{198}Pb g.s. band up to 4^+.

^{186}W(^{16}O,5nγ) (continued)

γ(^{197}Pb)

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[@]	Comments
32.4 *1*	2.6 *14*	1914.10	21/2$^-$	1881.9	21/2$^+$	(E1)		1.96	α(L)=1.48; α(M)=0.358 Mult.: α(exp)=2.04 *8* from I(γ+ce) balance. Iγ(32γ)/Iγ(57γ)≈0.1 (1979Al24) γ(1005γ) coin.
57.35 *10*	40 *6*	1914.10	21/2$^-$	1856.55	19/2$^+$	(E1)		0.416	α(L)=0.317; α(M)=0.0752; α(N+..)=0.0234 Mult.: α(exp)=0.43 *2* from I(γ+ce) balance.
80.9 *1*	2.66 *13*	2473.7	(27/2$^-$)	2392.7	(25/2$^-$)	M1		3.37	α(L)=2.57; α(M)=0.602; α(N+..)=0.197 Mult.: from 4.4 *17*, if I(γ+ce)(80.9γ)=I(γ+ce)(88.2γ) assumed. Iγ(80.9γ)/Iγ(88.2γ)=2.2 *9* from γ(607γ) coin (1978Ri01,1979Al24). α(L1+L2)exp=2.32 *20*, α(M1+M2)exp=0.54 *8*.
84.9 *1*		84.90	5/2$^-$	0.0	3/2$^-$	M1		2.92	α(L)=2.23; α(M)=0.523; α(N+..)=0.171 α(L1+L2)exp=2.28 *40*.
88.7 *1*	1.2 *4*	3168.9	(33/2$^+$)	3080.2	(29/2$^+$)	E2		10.8	α(L1+L2)exp=4.59 *30*, α(L3)exp=3.74 *32*, α(M1+M2)exp=1.21 *50*, α(M3)exp=1.02 *5*, α(exp)=10.8 (1986Pa16).
91.6 *1*	0.88 *36*	2392.7	(25/2$^-$)	2301.1	(23/2$^-$)	M1		12.6	α(K)=10.3 *3*; α(L)=1.79 *6*; α(M)=0.419 *13*; α(N+..)=0.138 *5* α(L1+L2)exp=1.92 *12*, α(M1+M2)exp=0.48 *8*.
172.5 *2*	1.01 *7*	2473.7	(27/2$^-$)	2301.1	(23/2$^-$)	E2		0.736	α(K)=0.237 *8*; α(L)=0.370 *12*; α(M)=0.097 *3*; α(N+..)=0.0312 *10* α(K)exp=0.35 *15*, α(L1+L2)exp=0.232 *11*, α(L3)exp=0.123 *8*.
234.4 *2*		319.30	13/2$^+$	84.90	5/2$^-$	M4		62.2	α(K)=22.7 *7*; α(L)=28.4 *9*; α(M)=8.3 *3*; α(N+..)=2.86 *9* Additional information 1. Mult.: based on ce-ratio data; see ^{197}Pb IT decay.
387.0 *1*	11 *3*	2301.1	(23/2$^-$)	1914.10	21/2$^-$	M1		0.223	α(K)=0.183 *6*; α(L)=0.0310 *10*; α(M)=0.00726 *22*; α(N+..)=0.00235 *7* α(K)exp=0.183 *6*, α(L1+L2)exp=0.032 *3*.
426.7 *2*	1.5 *2*	3080.2	(29/2$^+$)	2653.6	(25/2$^+$)	E2		0.0440	α(K)=0.0294 *9*; α(L)=0.0109 *4*; α(M)=0.00275 *9*; α(N+..)=0.00088 *3* α(K)exp=0.033 *3*.
442.4 *4*	3 *1*	3756.9		3314.5	(29/2)				
454.3 *1*	10.4 *2*	1856.55	19/2$^+$	1401.92	15/2$^+$	E2		0.0375	α(K)=0.0257 *8*; α(L)=0.0089 *3*; α(M)=0.00223 *7*; α(N+..)=0.00072 *2* α(K)exp=0.0231 *2*, α(L1+L2)exp=0.0105 *26*. $\gamma(\theta)$: A_2=+0.138 *63*, A_4=+0.087 *90*.
531.5 *1*	63.7 *20*	1856.55	19/2$^+$	1325.17	17/2$^+$	E2+M1	−1.3 +*2*−*3*	0.052 *6*	α(K)=0.041 *6*; α(L)=0.0084 *7* Additional information 3. α(K)exp=0.0408 *50*, α(L1+L2)exp=0.00847 *110*. δ: − from ^{198}Hg(^{3}He,4nγ) (1985St16). $\gamma(\theta)$; A_2=−0.181 *41*, A_4=+0.073 *94*.
556.9 *1*	16 *1*	1881.9	21/2$^+$	1325.17	17/2$^+$	E2		0.0230	α(K)=0.0167 *5*; α(L)=0.00475 *15* α(K)exp=0.0163, α(L1+L2)exp=0.0041 *11*. $\gamma(\theta)$: A_2=+0.242 *72*, A_4=+0.080 *82*.
589.0 *2*	3.5 *22*	1914.10	21/2$^-$	1325.17	17/2$^+$	M2+E3	1.4 *2*	0.107 *11*	α(K)=0.077 *9*; α(L)=0.0227 *11*

$^{197}_{82}Pb_{115}$-2

^{186}W(^{16}O,5nγ) (continued)

$\gamma(^{197}Pb)$ (continued)

E_γ[†]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[@]	Comments
									Additional information 4.
									α(K)exp=0.078 *8*, K/L=2.96 *10*, L1+L2/L3=20 *5*.
589.2 *2*	11 *1*	2653.6	(25/2$^+$)	2064.2	(21/2$^+$)	E2		0.0202	α(K)=0.0148 *5*; α(L)=0.00404 *13*
									α(K)exp=0.012 *3*.
606.5 *1*	13.4 *4*	3080.2	(29/2$^+$)	2473.7	(27/2$^-$)	E1		0.00648	α=0.00648; α(K)=0.00536 *16*; α(L)=0.00085 *3*
									α(K)exp=0.051 *9*.
									$\gamma(\theta)$: A_2=−0.231 *81*, A_4=+0.019 *164*.
627.4 *4*	9 *1*	2691.4	(23/2)	2064.2	(21/2$^+$)				
660.9 *1*	13 *1*	3314.5	(29/2)	2653.6	(25/2$^+$)				
738.9 *2*	20 *2*	2064.2	(21/2$^+$)	1325.17	17/2$^+$	E2		0.0124	α(K)=0.0095 *3*; α(L)=0.00218 *7*
									α(K)exp=0.019 *9*.
772.3 *3*	6 *1*	2653.6	(25/2$^+$)	1881.9	21/2$^+$	E2		0.0113	α(K)=0.0087 *3*; α(L)=0.00194 *6*
									α(K)exp=0.011 *4*.
809.2 *4*	5 *1*	2691.4	(23/2)	1881.9	21/2$^+$				
1006.2 *1*	40 *3*	1325.17	17/2$^+$	319.30	13/2$^+$	E2		0.00665	α=0.00665; α(K)=0.00528 *16*; α(L)=0.00103 *3*
									α(K)exp=0.00529 *60*, α(L1+L2)exp=0.00119 *20*.
									$\gamma(\theta)$: A_2=+0.122 *52*, A_4=−0.021 *42*.
1082.3 *1*	12.3 *4*	1401.92	15/2$^+$	319.30	13/2$^+$	E2(+M1)	≥2.7	0.0063 *6*	α=0.0063 *6*; α(K)=0.0051 *5*; α(L)=0.00094 *8*
									Additional information 2.
									α(K)exp=0.00489 *70*, α(L1+L2)exp=0.00114 *30*.
1366.3 *4*	1.5 *2*	2691.4	(23/2)	1325.17	17/2$^+$				

[†] From 1985Pa22.
[‡] Relative intensity renormalized to I(1006.2γ)=40 *3* from coincidence spectra gated by 2005.5-keV transition.
[#] From ce measurements,except as noted.
[@] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

$^{197}_{82}Pb_{115}$-3

^{186}W(^{16}O,5nγ)

Level Scheme

Intensities: Relative I_γ

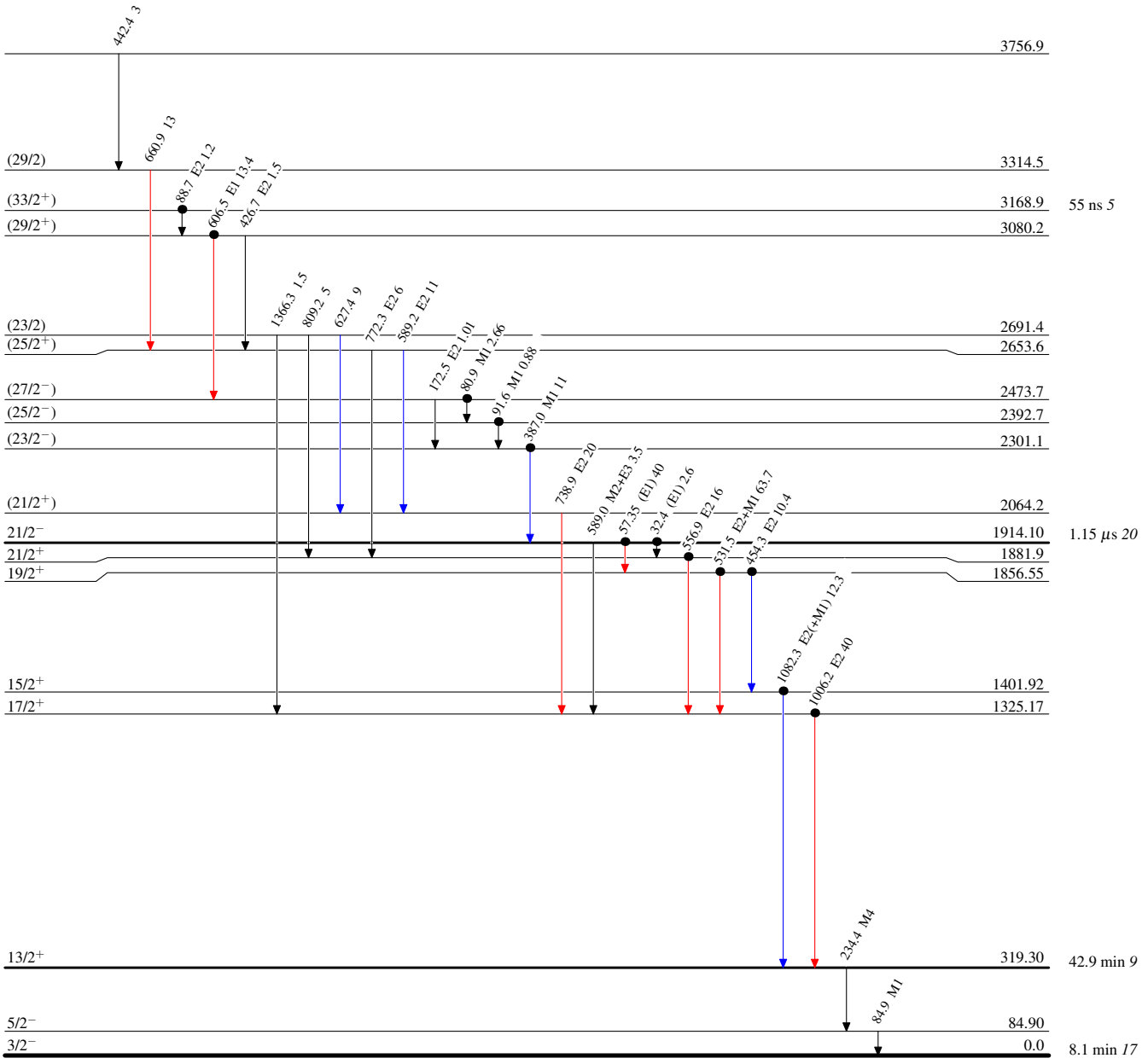
Legend

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

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

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

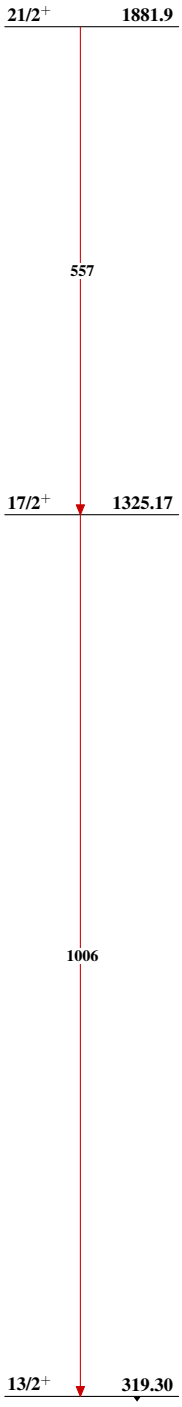
Coincidence



$^{197}_{82}Pb_{115}$

$^{186}W(^{16}O,5n\gamma)$

Band(A): ΔJ=2 level spacing is similar to ^{198}Pb g.s. band up to 4^+



$^{197}_{82}Pb_{115}$