^{187}Re(^{16}O,6nγ) 1995Zh36,1995Zh56

History

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

The level scheme is given as constructed by 1995Zh36 and 1995Zh56 based on coincidences,γ-ray intensities, observed $T_{1/2}$ and conversion coefficients limits.

1995Zh36,1995Zh56: ^{187}Re(^{16}O,6nG), E=85− 105 MeV. Measured γ, $\gamma\gamma$, $\gamma\gamma$(t) using a six BGO(AC) HPGe detectors and one intrinsic Ge planar detector.

^{197}Bi Levels

E(level)[†]	J$^\pi$[#]	$T_{1/2}$[‡]	Comments
0	(9/2$^-$)		
999.9 *4*	(13/2$^-$)		
1009.4 *4*	(11/2$^-$)		
1196.3 *4*	(13/2$^+$)		
1600.6 *7*	(17/2$^+$)	15.3 ns *30*	
1967.5 *8*	(21/2$^+$)		
1968+x		18.0 ns *31*	Additional information 1. E(level): this level decays to 1968 through a low energy γ of Eγ=x.
2064.7 *10*		36.7 ns *70*	
2088.6 *10*	(25/2$^+$)	19.3 ns *49*	J$^\pi$: ΔJ=2 (E2) 121.1γ to (21/2$^+$).
2127.9+x *5*			
2357.4 *11*	(27/2$^+$)	53 ns *21*	
2383.1+x *7*	(29/2$^-$)	253 ns *39*	J$^\pi$: Assigned by authors. Detail arguments not given.
2383.3 *11*	(27/2$^+$)		J$^\pi$: From ΔJ=1 294.7γ to (25/2$^+$) with different multipolarities.
2497.8 *11*			
2635.1 *12*			
2687.6 *11*			
2868.2+x *12*	(31/2$^-$)		J$^\pi$: Assigned by authors. Detail arguments not given.
2928.3 *12*			
3070.6 *11*			
3078.3 *12*			
3306.6+x *9*	(33/2$^-$)		J$^\pi$: Assigned by authors. Detail arguments not given.
3555.6 *13*			
3684.0+x *10*			
3866.2 *14*			
4024.8 *13*			

[†] From level scheme and Eγ's using least-squares fit to data.
[‡] From 1995Zh36,1995Zh56.
[#] From adopted values, except as noted.

γ(^{197}Bi)

E$_\gamma$[‡]	I$_\gamma$[†‡]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	Comments
97.2 *5*	13 *3*	2064.7		1967.5	(21/2$^+$)		
121.1 *5*	7 *2*	2088.6	(25/2$^+$)	1967.5	(21/2$^+$)	(E2)	Mult.: (E2). $\gamma(\theta)$ favors ΔJ=2; but Iγ rules out M2.
159.9 *5*	19 *4*	2127.9+x		1968+x			$\gamma(\theta)$: A$_2$=−0.08 *3*, A$_4$=−0.01 *3*, favors ΔJ=1; but Iγ suggest $\alpha(255\gamma)>\alpha(160\gamma)$ rules out some multipolarity for both.
186.9 *5*	51 *10*	1196.3	(13/2$^+$)	1009.4	(11/2$^-$)		$\gamma(\theta)$: A$_2$=−0.18 *7*, A$_4$=0.009 *6*.
196.4 *5*	31 *6*	1196.3	(13/2$^+$)	999.9	(13/2$^-$)		$\gamma(\theta)$: A$_2$=−0.09 *2*, A$_4$=0.01 *1*; Iγ estimated from coincidence data.

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^{187}Re(^{16}O,6nγ) 1995Zh36,1995Zh56 (continued)

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

E_γ[‡]	I_γ[†‡]	E_i(level)	J_i^π	E_f	J_f^π	Comments
240.7 *5*	8 *1*	2928.3		2687.6		
255.2 *5*	13 *1*	2383.1+x	(29/2$^-$)	2127.9+x		$\gamma(\theta)$: A_2=−0.10 *3*, A_4=−0.02 *4*, favors ΔJ=1; but Iγ suggest $\alpha(255\gamma)>\alpha(160\gamma)$ rules out some multipolarity for both.
277.7 *5*	6 *1*	2635.1		2357.4	(27/2$^+$)	
292.7 *5*	8 *1*	2357.4	(27/2$^+$)	2064.7		$\gamma(\theta)$: A_2=0.18 *4*, A_4=0.04 *3*.
294.7 *5*	32 *3*	2383.3	(27/2$^+$)	2088.6	(25/2$^+$)	$\gamma(\theta)$: A_2=−0.13 *1*, A_4=−0.03 *2*.
310.6 *5*	4 *1*	3866.2		3555.6		
366.9 *5*	94 *9*	1967.5	(21/2$^+$)	1600.6	(17/2$^+$)	$\gamma(\theta)$: A_2=0.09 *2*, A_4=0.02 *1*.
377.4 *5*	5 *1*	3684.0+x		3306.6+x	(33/2$^-$)	Iγ estimated from coincidence data.
404.3 *5*	100	1600.6	(17/2$^+$)	1196.3	(13/2$^+$)	$\gamma(\theta)$: A_2=0.12 *1*, A_4=0.03 *2*.
433.1 *5*	7 *1*	2497.8		2064.7		
438.6 *5*	8 *1*	3306.6+x	(33/2$^-$)	2868.2+x	(31/2$^-$)	$\gamma(\theta)$: A_2=−0.31 *7*, A_4=0.03 *5*.
484.9 *5*	17 *3*	2868.2+x	(31/2$^-$)	2383.1+x	(29/2$^-$)	$\gamma(\theta)$: A_2=−0.30 *3*, A_4=−0.04 *3*.
580.5 *5*	6 *1*	3078.3		2497.8		
622.9 *5*	10 *1*	2687.6		2064.7		$\gamma(\theta)$: A_2=−0.19 *6*, A_4=−0.02 *5*.
627.3 *5*	13 *1*	3555.6		2928.3		
863.6 *5*	16 *2*	2928.3		2064.7		$\gamma(\theta)$: A_2=0.07 *3*, A_4=−0.03 *4*; Iγ estimated from coincidence data.
923.5 *5*	14 *1*	3306.6+x	(33/2$^-$)	2383.1+x	(29/2$^-$)	
946.5 *5*	6 *1*	4024.8		3078.3		Iγ estimated from coincidence data.
999.9 *5*	31 *3*	999.9	(13/2$^-$)	0	(9/2$^-$)	$\gamma(\theta)$: A_2=0.212 *4*, A_4=−0.07 *6*.
1005.9 *5*	5 *1*	3070.6		2064.7		Iγ estimated from coincidence data.
1009.4 *5*	51 *5*	1009.4	(11/2$^-$)	0	(9/2$^-$)	$\gamma(\theta)$: A_2=−0.31 *2*, A_4=0.00 *0*.
1196.3 *5*	18 *2*	1196.3	(13/2$^+$)	0	(9/2$^-$)	$\gamma(\theta)$: A_2=0.19 *3*, A_4=−0.11 *2*.

† Relative intensity normalized to Iγ(404.3γ)=100.

‡ Obtained from single and coincidence measurements(1995Zh56).

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Level Scheme

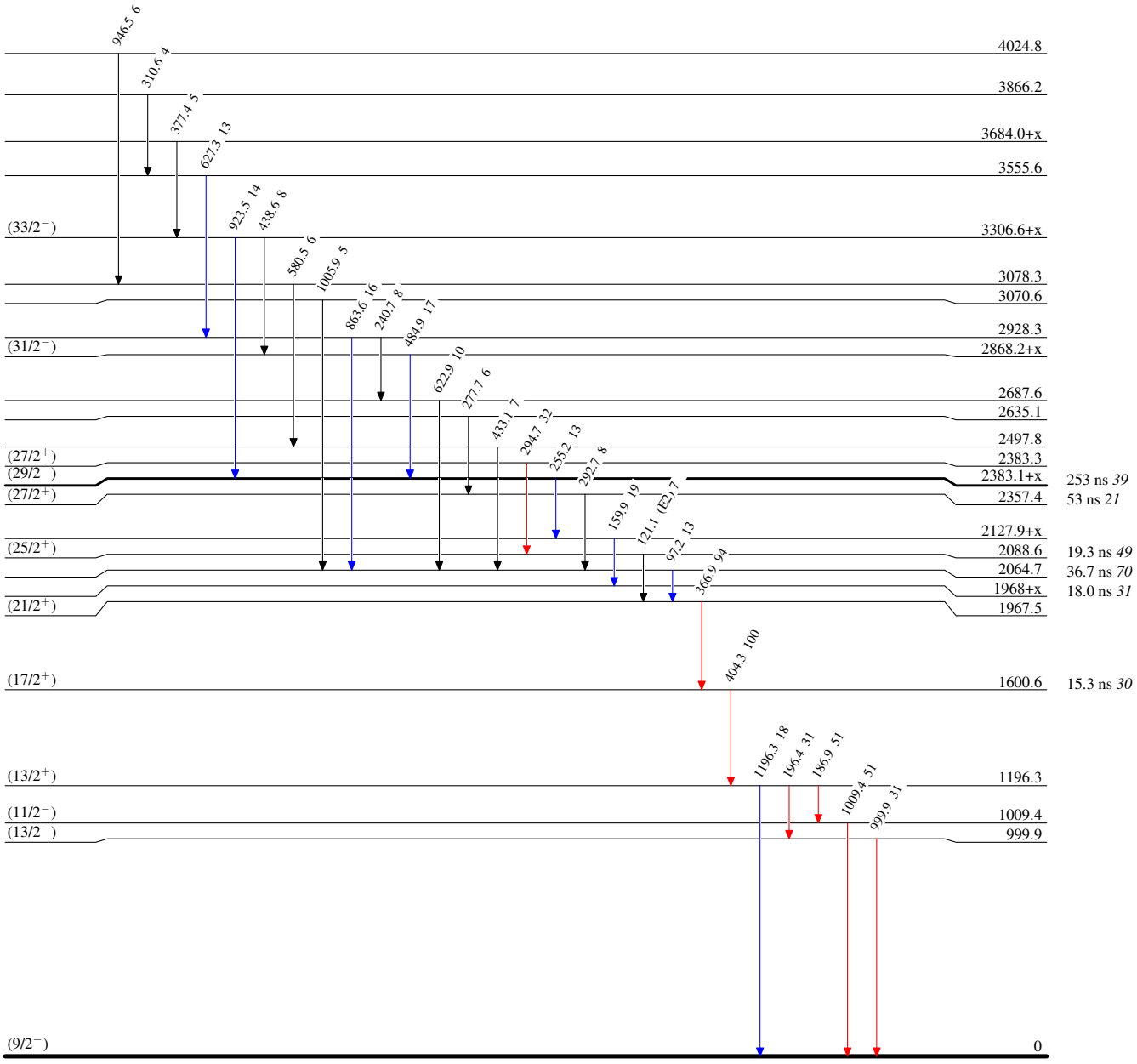
Intensities: Relative I_γ

Legend

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

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

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



$^{197}_{83}Bi_{114}$