^{112}Sn(^{16}O,2npγ) 1996St01,1973Le09

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	J. Katakura	NDS 112, 495 (2011)	1-Jan-2010

1996St01: Enriched target; E=79 MeV; Compton-suppressed Ge, BGO; $\gamma\gamma$ coin, DCO ratio.
1973Le09: Enriched target; semi γ, excitation function E(^{16}O)=72-94 MeV.

^{125}La Levels

E(level)†	Jπ‡	$T_{1/2}$#	E(level)†	Jπ‡
0.0&	(3/2+)		2330.9 *4*	
8.5@ *4*	(11/2−)		2412.0& *5*	
128.8 *3*	(5/2+)		2458.9*b* *4*	(25/2+)
249.2@ *4*	(15/2−)	101 ps *+14−24*	2496.8 *4*	
296.40& *20*	(7/2+)		2625.0 *4*	(21/2,23/2)
643.8& *3*	(11/2+)		2631.3*a* *4*	(27/2+)
685.5@ *4*	(19/2−)	5.3 ps *+4−17*	2660.1*c* *4*	(27/2−)
1072.7*c* *4*	(15/2−)		2850.5 *5*	
1111.2 *4*	(17/2+)		2863.8 *4*	
1120.2& *4*	(15/2)		2884.9@ *5*	(31/2−)
1289.0@ *4*	(23/2−)	≤2 ps	3038.2*b* *4*	(29/2+)
1481.3*c* *4*	(19/2−)		3046.2& *5*	
1491.4 *4*			3300.6*a* *5*	(31/2+)
1615.5*a* *4*	(19/2+)		3329.1 *5*	(25/2,27/2,29/2)
1727.1 *4*	(21/2−)		3401.0*c* *5*	(31/2−)
1801.7& *4*			3749.2*b* *5*	(33/2+)
1818.1 *4*			3804.5@ *5*	(35/2−)
1978.4*b* *4*	(21/2+)		4078.0*a* *5*	(35/2+)
2013.4*c* *4*	(23/2−)		4216.7*c* *5*	
2033.1@ *4*	(27/2−)		4589.3*b* *5*	(37/2+)
2037.1 *4*			4772.8@ *6*	(39/2−)
2074.8*a* *4*	(23/2+)		4954.8*a* *6*	(39/2+)

† From a least-squares fit to Eγ's by evaluators.
‡ From $\gamma\gamma(\theta)$(DCO), RUL and probable band assignment. The lowest three levels are from systematics (1996St01).
# From recoil-distance method (1997St12).
@ Band(A): 1/2(550).
& Band(B): mixture of 3/2(411) and 3/2(422).
a Band(C): mixture of 3/2(422) and 1/2(420).
b Band(D): 1/2(420).
c Band(E): band.

γ(^{125}La)

E_i(level)	J_i^π	Eγ†	Iγ‡	E_f	J_f^π	Mult.@	$I_{(\gamma+ce)}$#	Comments
249.2	(15/2−)	240.4 *2*		8.5	(11/2−)	E2	100	DCO=1.03 *2*.
296.40	(7/2+)	167.6 *2*	66 *3*	128.8	(5/2+)	D+Q		DCO=0.91 *7*.
		296.4 *2*	100	0.0	(3/2+)	Q		DCO=1.01 *7*.
643.8	(11/2+)	347.4 *2*	100	296.40	(7/2+)	Q		DCO=0.98 *5*.

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^{112}Sn(^{16}O,2npγ) 1996St01,1973Le09 (continued)

γ(^{125}La) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[@]	$I_{(\gamma+ce)}$[#]	Comments
643.8	(11/2$^+$)	635.3 *2*	20 *4*	8.5	(11/2$^-$)	D		DCO=1.0 *1*.
685.5	(19/2$^-$)	436.4 *2*		249.2	(15/2$^-$)	E2	92	DCO=0.98 *2*.
1072.7	(15/2$^-$)	823.4 *2*	60 *20*	249.2	(15/2$^-$)			
		1064.4 *2*	100	8.5	(11/2$^-$)			
1111.2	(17/2$^+$)	425.4 *2*	70 *20*	685.5	(19/2$^-$)			DCO=0.36 *4*.
		862.2 *2*	100	249.2	(15/2$^-$)			DCO=0.10 *3*.
1120.2	(15/2)	476.4 *2*	100	643.8	(11/2$^+$)	Q		DCO=1.00 *5*.
		871.0 *2*	10 *1*	249.2	(15/2$^-$)	D		DCO=1.04 *19*.
1289.0	(23/2$^-$)	603.6 *2*		685.5	(19/2$^-$)	E2	97	DCO=0.98 *5*.
1481.3	(19/2$^-$)	408.7 *2*	100	1072.7	(15/2$^-$)	Q		DCO=1.1 *1*.
		795.9 *2*	40 *7*	685.5	(19/2$^-$)	D+Q		DCO=0.42 *10*.
		1232.2 *2*	133 *13*	249.2	(15/2$^-$)	(Q)		DCO=0.75 *10*.
								Mult.: From adopted gammas.
1491.4		806.2 *2*		685.5	(19/2$^-$)			
		1242.0 *2*		249.2	(15/2$^-$)			
1615.5	(19/2$^+$)	495.3 *2*	100	1120.2	(15/2)	Q		DCO=0.98 *5*.
		504.2 *2*	8 *1*	1111.2	(17/2$^+$)			DCO=0.50 *8*.
		930.1 *2*	22 *1*	685.5	(19/2$^-$)	D		DCO=1.12 *13*.
1727.1	(21/2$^-$)	1041.5 *2*		685.5	(19/2$^-$)	D+Q		DCO=0.47 *3*.
1801.7		681.5 *2*		1120.2	(15/2)			DCO=1.37 *16*.
1818.1		1132.6 *2*		685.5	(19/2$^-$)			
		1568.8 *2*		249.2	(15/2$^-$)			DCO=0.30 *17*.
1978.4	(21/2$^+$)	1292.9 *2*		685.5	(19/2$^-$)	D		DCO=0.53 *7*.
2013.4	(23/2$^-$)	532.3 *2*	100	1481.3	(19/2$^-$)	Q		DCO=1.03 *10*.
		1327.9 *2*	40 *6*	685.5	(19/2$^-$)	(Q)		DCO=0.82 *9*.
								Mult.: From adopted gammas.
2033.1	(27/2$^-$)	744.2 *2*		1289.0	(23/2$^-$)	Q		DCO=1.03 *8*.
2037.1		747.7 *2*		1289.0	(23/2$^-$)			
		1352.0 *2*		685.5	(19/2$^-$)			
2074.8	(23/2$^+$)	347.6 *2*		1727.1	(21/2$^-$)	D		DCO=0.50 *8*.
		459.2 *2*	100	1615.5	(19/2$^+$)	Q		DCO=1.02 *6*.
		785.8 *2*	11 *1*	1289.0	(23/2$^-$)	D		DCO=1.01 *12*.
2330.9		529.2 *2*		1801.7				DCO=1.0 *3*.
2412.0		610.3 *2*		1801.7				DCO=1.1 *1*.
2458.9	(25/2$^+$)	384.2 *2*	7.9 *23*	2074.8	(23/2$^+$)	D+Q		I_γ: Calculated from I(384)/I(480)=0.24 *6* and I(480)/I(1169)=0.33 *5* by evaluators.
								DCO=0.20 *14*.
		480.4 *2*	33 *5*	1978.4	(21/2$^+$)	Q		DCO=1.05 *16*.
		1169.9 *2*	100	1289.0	(23/2$^-$)	D		DCO=0.33 *2*.
2496.8		678.4 *2*		1818.1				
		1208.0 *2*		1289.0	(23/2$^-$)			
2625.0	(21/2,23/2)	1336.0 *2*		1289.0	(23/2$^-$)			DCO=0.47 *8*.
2631.3	(27/2$^+$)	556.4 *2*		2074.8	(23/2$^+$)	Q		DCO=0.97 *8*.
2660.1	(27/2$^-$)	646.8 *2*	100	2013.4	(23/2$^-$)	Q		DCO=0.97 *6*.
		1371.0 *2*	14 *4*	1289.0	(23/2$^-$)			
2850.5		817.4 *2*		2033.1	(27/2$^-$)			
2863.8		404.9 *2*		2458.9	(25/2$^+$)			DCO=0.56 *10*.
		533.0 *2*		2330.9				DCO=1.6 *6*.
2884.9	(31/2$^-$)	851.8 *2*		2033.1	(27/2$^-$)	Q		DCO=0.94 *4*.
3038.2	(29/2$^+$)	406.7 *2*	28 *10*	2631.3	(27/2$^+$)			
		579.3 *2*	100	2458.9	(25/2$^+$)	Q		DCO=0.8 *1*.
		1005.3 *2*	72 *9*	2033.1	(27/2$^-$)	D		DCO=0.50 *4*.
3046.2		634.2 *2*		2412.0				
3300.6	(31/2$^+$)	669.3 *2*		2631.3	(27/2$^+$)	Q		DCO=1.00 *8*.

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^{112}Sn(^{16}O,2npγ) 1996St01,1973Le09 (continued)

γ(^{125}La) (continued)

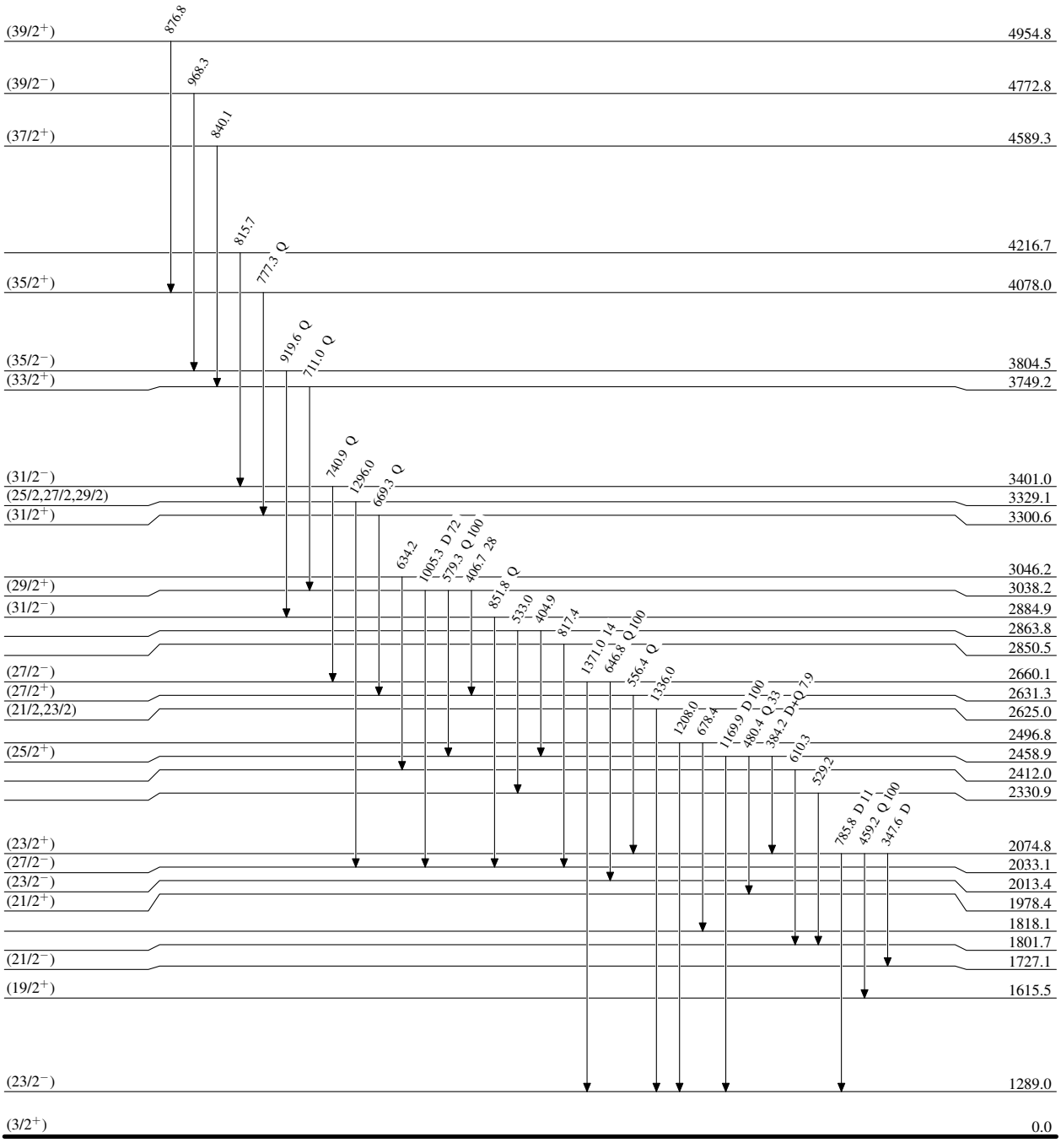
E_i(level)	J_i^π	E_γ[†]	E_f	J_f^π	Mult.[@]	Comments
3329.1	(25/2,27/2,29/2)	1296.0 *2*	2033.1	(27/2$^-$)		DCO=0.40 *17*.
3401.0	(31/2$^-$)	740.9 *2*	2660.1	(27/2$^-$)	Q	DCO=0.95 *17*.
3749.2	(33/2$^+$)	711.0 *2*	3038.2	(29/2$^+$)	Q	DCO=0.8 *1*.
3804.5	(35/2$^-$)	919.6 *2*	2884.9	(31/2$^-$)	Q	DCO=0.99 *5*.
4078.0	(35/2$^+$)	777.3 *2*	3300.6	(31/2$^+$)	Q	DCO=1.01 *9*.
4216.7		815.7 *2*	3401.0	(31/2$^-$)		
4589.3	(37/2$^+$)	840.1 *2*	3749.2	(33/2$^+$)		
4772.8	(39/2$^-$)	968.3 *2*	3804.5	(35/2$^-$)		
4954.8	(39/2$^+$)	876.8 *2*	4078.0	(35/2$^+$)		

[†] From 1996St01.
[‡] Branching ratios (1996St01).
[#] Relative to I(240.9γ)=100 at E=72 MeV (1973Le09).
[@] From DCO (1996St01), RUL and probable band assignment.

^{112}Sn(^{16}O,2npγ) 1996St01,1973Le09

Level Scheme

Intensities: Relative photon branching from each level

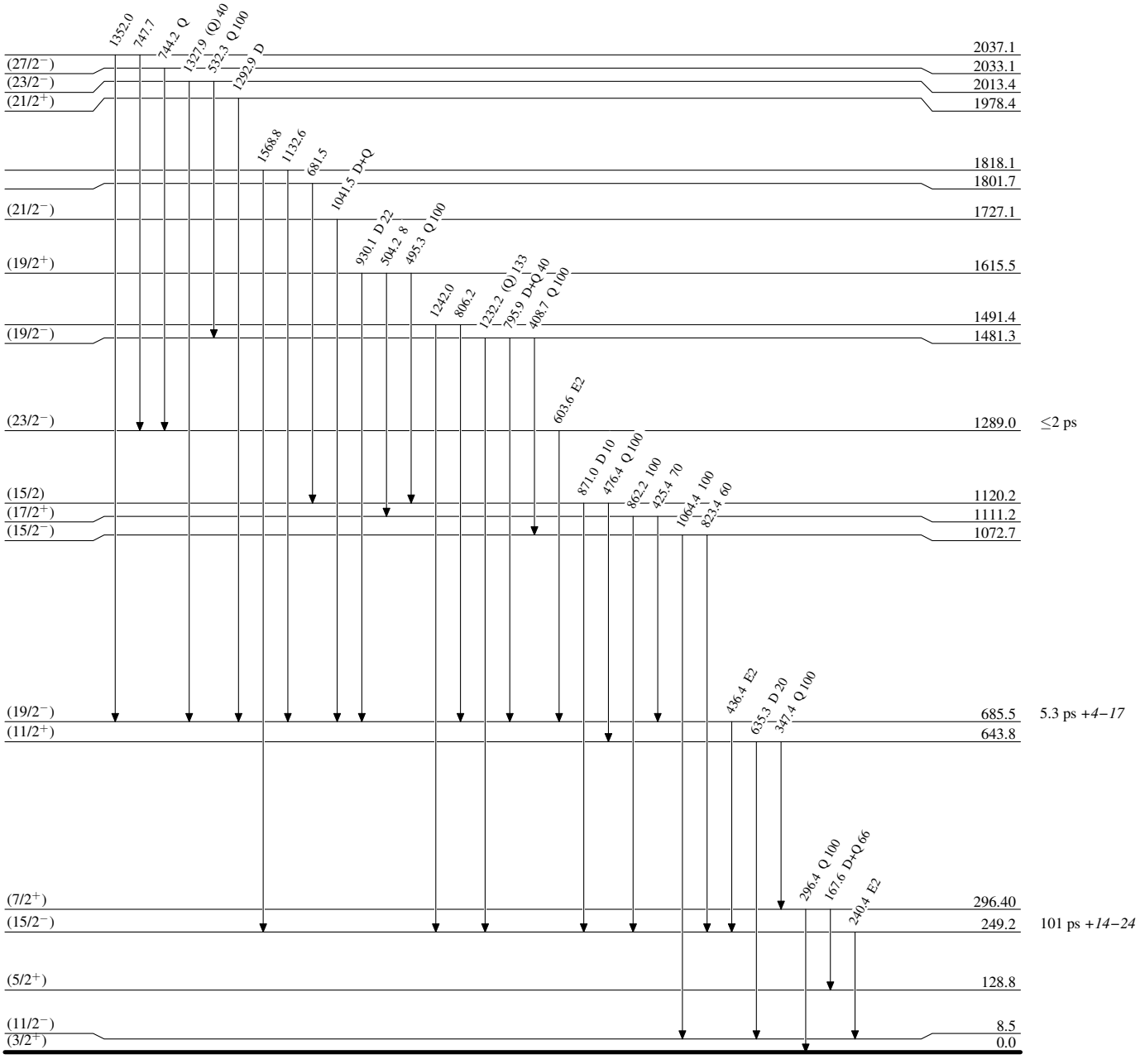


$^{125}_{57}La_{68}$

^{112}Sn(^{16}O,2npγ) 1996St01,1973Le09

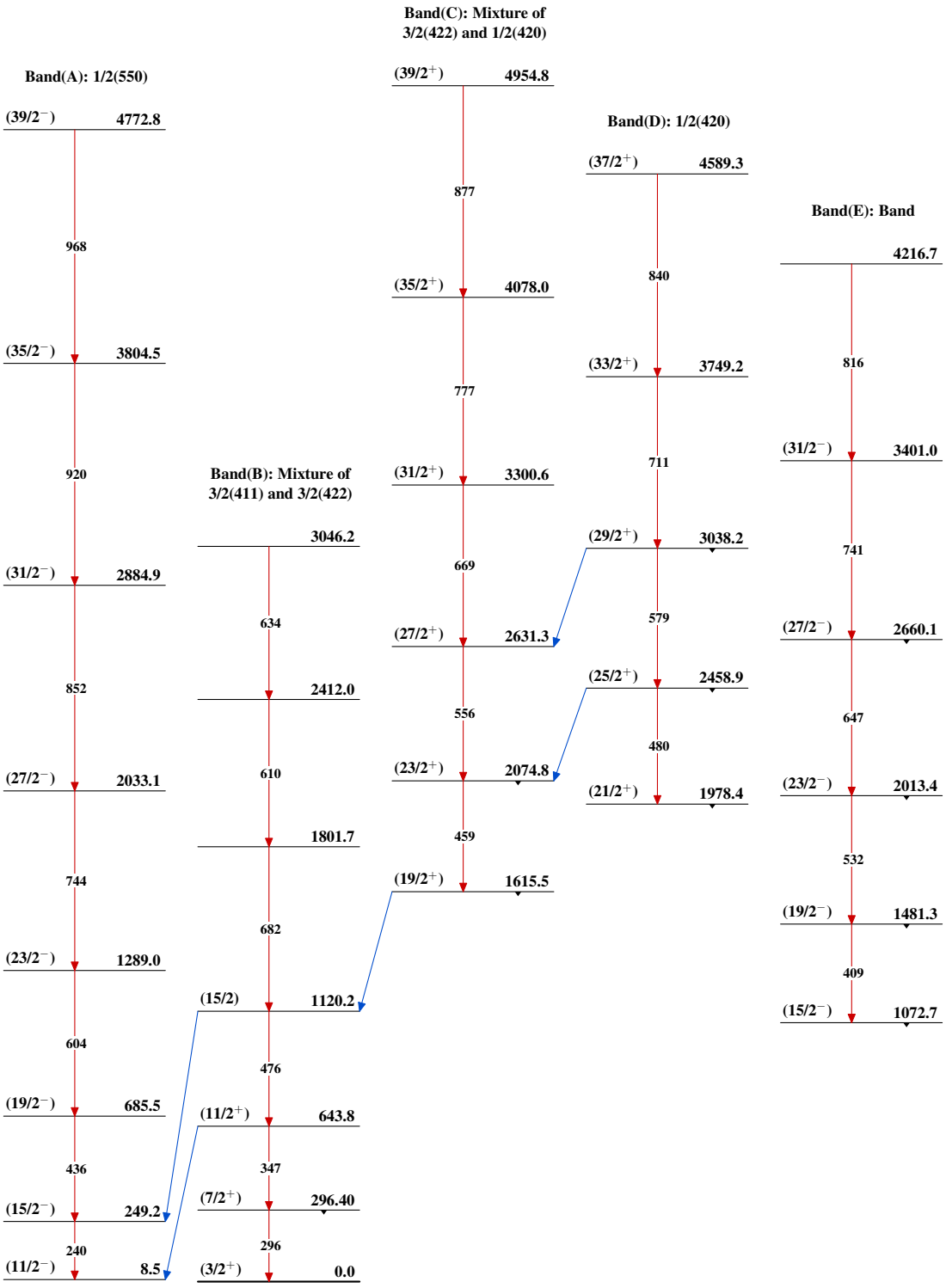
Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{125}_{57}La_{68}$

^{112}Sn(^{16}O,2npγ) 1996St01,1973Le09



$^{125}_{57}La_{68}$