^{54}Fe(^{58}Ni,2αnpγ) 2002So12

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	D. De Frenne	NDS 110, 1745 (2009)	31-Dec-2008

E=240 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$, γ(lin pol) using the EUROBALL comprised of 26 clover and 15 cluster composite Compton-suppressed Ge detectors, in conjunction with the charged.
Others: 1993Se05, 1995Se08, 1993Jo07 particle detector ball, ISIS, consisting of 40 Si ΔE-E telescopes.

^{102}In Levels

E(level)†	J$^\pi$	E(level)†	J$^\pi$	E(level)†	J$^\pi$	E(level)†	J$^\pi$
0&	(6$^+$)	1723.6‡ *7*	(10$^+$)	3941.3‡ *16*	(12)	4958.7@ *13*	
144.6& *4*	(7$^+$)	1913.5‡ *7*	(11$^+$)	4119.6@ *9*	(13)	5189.4‡ *19*	
979.7& *6*	(8$^+$)	2039.7@ *7*	(11$^+$)	4212.5‡ *16*	(13)	5191.6# *11*	(14$^+$)
1281.7‡ *6*	(9$^+$)	3063.8 *9*	(12$^+$)	4342.0@ *10*	(14)	5852.6# *14*	
1663.8@ *7*	(10$^+$)	3179.7@ *9*	(12$^+$)	4732.7# *10*	(13$^+$)	5978.1‡ *21*	

† From least-squares fit to Eγ's (by compilers).
‡ Band(A): γ cascade based on (9$^+$).
# Band(B): γ cascade based on (13$^+$).
@ Band(C): γ cascade based on (10$^+$).
& Band(D): γ cascade based on (6$^+$).

γ(^{102}In)

R=I$\gamma_{\theta 1}$/I$\gamma_{\theta 2}$.

Eγ	Iγ	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	Comments
144.6 *4*	100 *5*	144.6	(7$^+$)	0	(6$^+$)	M1	R=0.59 *2*. POL=−0.8 *11*.
190.0 *4*	35 *4*	1913.5	(11$^+$)	1723.6	(10$^+$)	M1	R=0.43 *3*. POL=−0.8 *10*.
222.4 *4*	11.5 *16*	4342.0	(14)	4119.6	(13)	M1	R=0.56 *3*. POL=−1.0 *14*.
249.7 *4*	36 *4*	1913.5	(11$^+$)	1663.8	(10$^+$)	D	R=0.57 *6*.
271.2 *4*	6.1 *12*	4212.5	(13)	3941.3	(12)	M1	R=0.59 *6*. POL=−1.0 *11*.
x279.8 *5*	3.2 *6*					M1	R=0.66 *9*. POL=−0.8 *11*.
302.3 *4*	25 *3*	1281.7	(9$^+$)	979.7	(8$^+$)	M1	R=0.58 *5*. POL=−0.9 *8*.
315.8 *4*	10.5 *23*	2039.7	(11$^+$)	1723.6	(10$^+$)	M1	R=0.62 *6*. POL=−1.3 *10*.
376.1 *4*	25 *3*	2039.7	(11$^+$)	1663.8	(10$^+$)	M1	R=0.51 *5*. POL=−0.7 *8*.
382.4 *4*	61 *6*	1663.8	(10$^+$)	1281.7	(9$^+$)	M1	R=0.64 *3*. POL=−0.3 *5*.
390.6 *10*	4.1 *5*	4732.7	(13$^+$)	4342.0	(14)	M1	R=0.51 *11*. POL=−1.4 *14*.
441.6 *4*	48 *5*	1723.6	(10$^+$)	1281.7	(9$^+$)	M1	R=0.70 *5*. POL=−0.8 *6*.

Continued on next page (footnotes at end of table)

^{54}Fe(^{58}Ni,2αnpγ) 2002So12 (continued)

γ(^{102}In) (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
458.9 *5*	10.9 *13*	5191.6	(14$^+$)	4732.7	(13$^+$)	(M1)	R=0.75 *18*. POL=−0.9 *14*.
616.7 *8*	5.2 *11*	4958.7		4342.0	(14)		
661.0 *8*	5.9 *10*	5852.6		5191.6	(14$^+$)		
788.7 *10*	10.6 *5*	5978.1		5189.4		D	R=0.49 *10*.
835.4 *4*	43 *6*	979.7	(8$^+$)	144.6	(7$^+$)	M1	R=0.59 *5*. POL=−1.0 *10*.
939.9 *7*	6.4 *5*	4119.6	(13)	3179.7	(12$^+$)	(D)	R=0.62 *21*.
976.9 *9*	4.8 *12*	5189.4		4212.5	(13)		
1023.8 *9*	5.2 *12*	3063.8	(12$^+$)	2039.7	(11$^+$)	M1	R=0.59 *10*. POL=−2.4 *19*.
1055.6 *7*	6.4 *10*	4119.6	(13)	3063.8	(12$^+$)	D	R=0.43 *14*.
1136.8 *4*	69 *4*	1281.7	(9$^+$)	144.6	(7$^+$)	E2	R=1.12 *7*. POL=1.5 *9*.
1139.8 *15*	2.9 *9*	3179.7	(12$^+$)	2039.7	(11$^+$)		
1150.3 *11*	3.9 *7*	3063.8	(12$^+$)	1913.5	(11$^+$)	(M1)	R=0.67 *14*. POL=−2.4 *22*.
1266.4 *8*	5.5 *6*	3179.7	(12$^+$)	1913.5	(11$^+$)	M1	R=0.51 *17*. POL=−3.2 *34*.
2027.8 *14*	6.2 *12*	3941.3	(12)	1913.5	(11$^+$)	(D)	R=0.69 *18*.
2819.3 *9*	7.9 *19*	4732.7	(13$^+$)	1913.5	(11$^+$)	Q	R=1.12 *26*.

[x] γ ray not placed in level scheme.

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Level Scheme

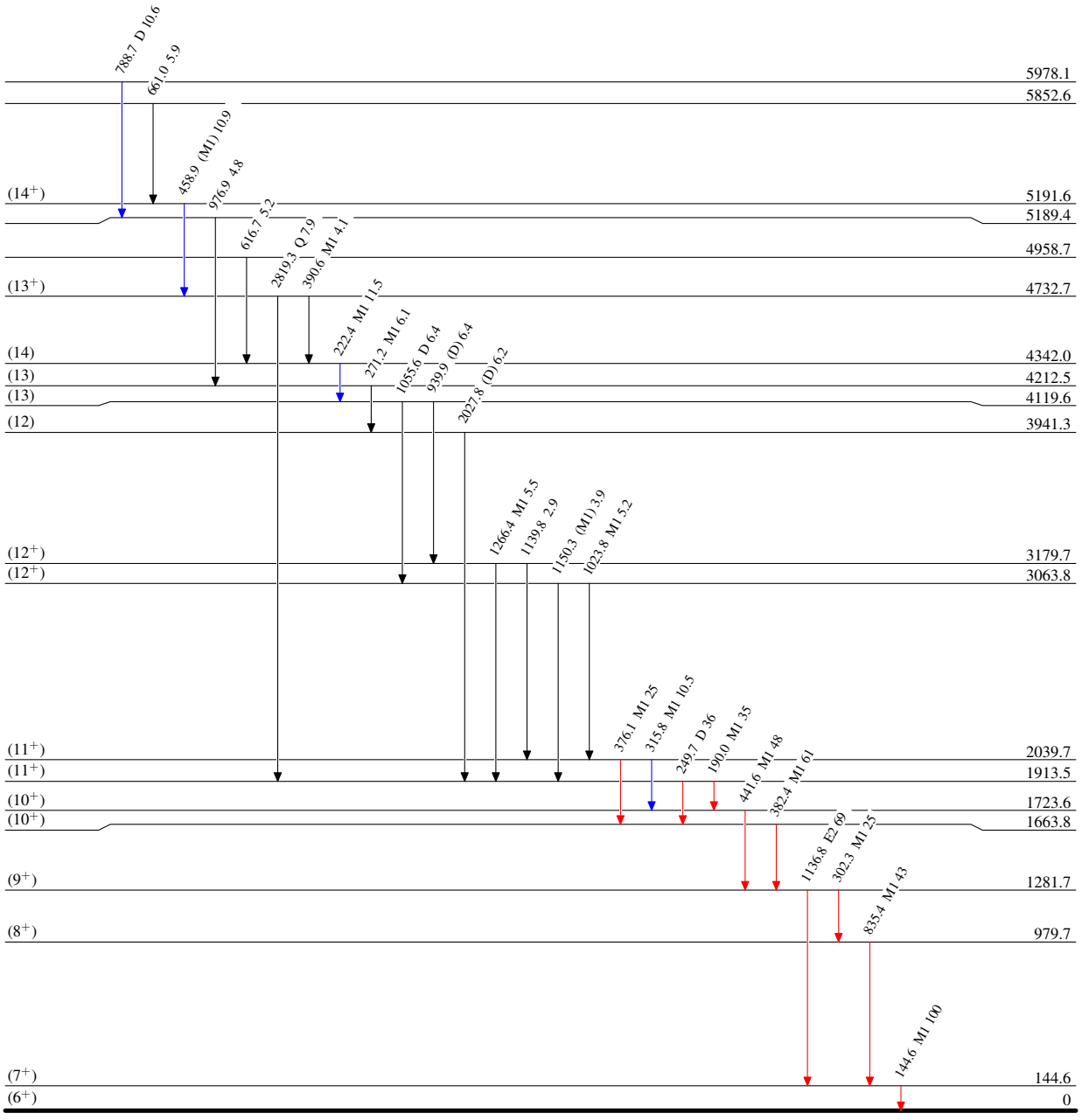
Intensities: Relative I_γ

Legend

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

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

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



$^{102}_{49}In_{53}$

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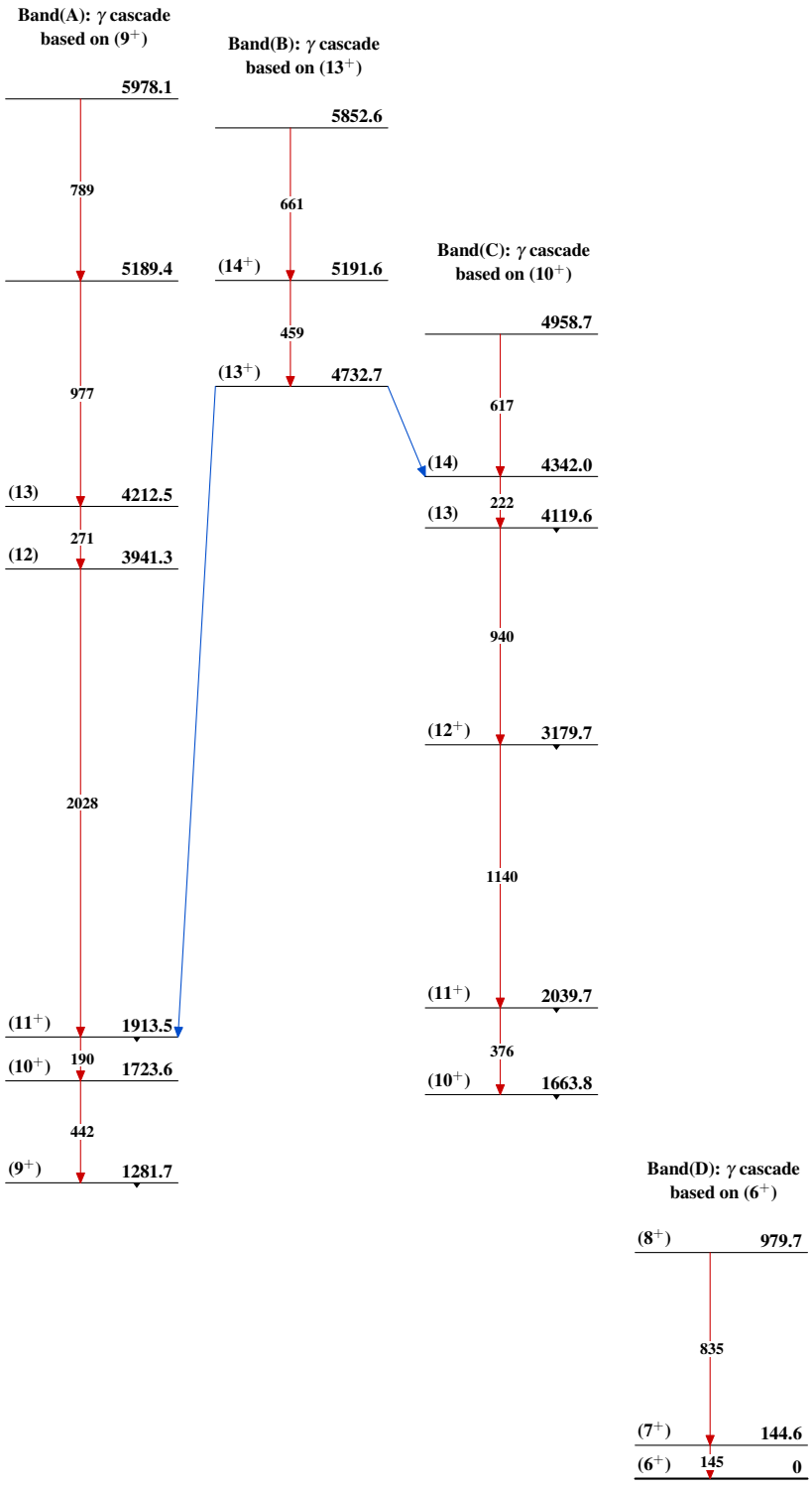

$^{102}_{49}In_{53}$