^{92}Mo(^{54}Fe,n3pγ) 2009Ma06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. D. Johnson, D. Symochko(a), M. Fadil(b), and J. K. Tuli	NDS 112, 1949 (2011)	1-Jun-2010

E=245, 252, 265 MeV beam provided by K130 cyclotron at University of Jyvaskyla. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma(\theta)$ using JUROGAM array with 43 Compton-suppressed Ge detectors, GREAT focal plane clover and planar detectors coupled to RITU gas-filled separator. Recoil-isomer tagged $\gamma\gamma$ coin used for γ rays above the 8^+, 26−μs isomer.

2001Sc09: ^{92}Mo(^{54}Fe,3pnγ) E=236 MeV. Measured Eγ, Iγ and $\gamma\gamma$ using JUROSPHERE spectrometer consisting of 15 EUROGAM type I detectors, seven TESSA type detectors, and five NORDBALL type detectors. They introduced a few levels above 25 μs level.

^{142}Tb Levels

E(level)[†]	J$^\pi$	T$_{1/2}$	Comments
0.0			
279.8 *4*	5$^-$	303 ms *17*	%IT=100 Additional information 1. E(level): from XUNDL-2 dataset compiled from 2006Ta08. T$_{1/2}$: 1991Fi03 give 303 ms *17* in the abstract but 303 ms *7* in the paper, the latter is a misprint (as per priv comm from one of the authors).
311.99 *18*	(5$^-$)		
395.8 *4*	6$^-$		
477.95 *22*	6$^-$		
615.5[&] *4*	7$^-$		
652.6[‡] *4*	8$^+$	26 μs *1*	T$_{1/2}$: from isomer-tagged $\gamma\gamma$ coin. Configuration=πh$_{11/2}\otimes\nu$h$_{11/2}$.
710.6 *4*			
844.2[a] *5*			
852.6 *5*			
1020.0[#] *4*	9$^+$		
1117.9[&] *5*	(9$^-$)		
1209.9[‡] *4*	10$^+$		
1246.2[a] *5*			
1558.8[@] *4*			
1648.4[#] *4*	(11$^+$)		
1790.7[&] *6*	(11$^-$)		
1832.4[a] *6*			
1969.9[‡] *4*	12$^+$		
2246.4[@] *5*			
2437.3[#] *4*	(13$^+$)		
2539.2[a] *6*			
2567.7[&] *7*	(13$^-$)		
2847.6[‡] *4*	(14$^+$)		
2968.4[@] *6*			
3285.9[a] *7*			
3340.1[&] *7*	(15$^-$)		
3700.2[‡] *5*	(16$^+$)		
4017.8[a] *8*			
4530.4[‡] *6*	(18$^+$)		
4806.3[a] *8*			
5726.7[a] *8*			

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^{92}Mo(^{54}Fe,n3pγ) 2009Ma06 (continued)

^{142}Tb Levels (continued)

E(level)[†]
6787.1[a] 9
7987.5[a] 10

[†] From least-squares fit to Eγ's (by evaluators). Normalized χ^2=1.97.
[‡] Band(A): Band based on 8^+,α=0. Configuration=$\pi h_{11/2}\otimes\nu h_{11/2}$($\pi$E$\nu$F).
[#] Band(a): Band based on 9^+,α=1. Configuration=$\pi h_{11/2}\otimes\nu h_{11/2}$($\pi$E$\nu$E).
[@] Band(B): Band based on 1559 level.
[&] Band(C): Band based on 7^-. Configuration=$\pi h_{11/2}\otimes\nu h_{11/2}$($\pi$E$\nu$B).
[a] Band(D): Band based on 844 level. Configuration=$\pi h_{11/2}\otimes\nu h_{11/2}$($\pi$G$\nu$E or πGνF)).

γ(^{142}Tb)

E$_\gamma$	I$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
32.1 2	9[#] 2	311.99	(5$^-$)	279.8	5$^-$	
37.1 1	100[#] 3	652.6	8$^+$	615.5	7$^-$	
81 1	10[‡#] 2	477.95	6$^-$	395.8	6$^-$	
84 1	10[‡#] 2	395.8	6$^-$	311.99	(5$^-$)	
116.3 5	4[#] 1	395.8	6$^-$	279.8	5$^-$	
133.6 2	11 2	844.2		710.6		
137.2 5	37[#] 9	615.5	7$^-$	477.95	6$^-$	
141.9 2	19 2	852.6		710.6		
165.9 2	32[#] 2	477.95	6$^-$	311.99	(5$^-$)	
189.2[@] 5	5 2	1209.9	10$^+$	1020.0	9$^+$	
198.3 4	6[#] 2	477.95	6$^-$	279.8	5$^-$	
220.0 3	13[#] 3	615.5	7$^-$	395.8	6$^-$	
232.7 3	34 4	710.6		477.95	6$^-$	
303.3 5	67[#] 13	615.5	7$^-$	311.99	(5$^-$)	
321.1 2	11 4	1969.9	12$^+$	1648.4	(11$^+$)	
367.3 1	32 3	1020.0	9$^+$	652.6	8$^+$	A$_2$=−0.4 1; A$_4$=−0.1 1
393.5 3	19 5	1246.2		852.6		
402.2 3	21 6	1246.2		844.2		
410.4[@] 2	10 4	2847.6	(14$^+$)	2437.3	(13$^+$)	
438.4 1	61 2	1648.4	(11$^+$)	1209.9	10$^+$	A$_2$=−0.18 6; A$_4$=0.0 1
468.1 3	26 2	2437.3	(13$^+$)	1969.9	12$^+$	
502.4 3	55 8	1117.9	(9$^-$)	615.5	7$^-$	
538.6 2	44 3	1558.8		1020.0	9$^+$	
557.3 1	100 6	1209.9	10$^+$	652.6	8$^+$	A$_2$=+0.40 6; A$_4$=0.0 1
586.2 3	38 5	1832.4		1246.2		
598.4 3	18 3	2246.4		1648.4	(11$^+$)	
629.0 5	8 2	1648.4	(11$^+$)	1020.0	9$^+$	
672.8 3	38 10	1790.7	(11$^-$)	1117.9	(9$^-$)	
687.2 3	16 4	2246.4		1558.8		
706.8 2	28 6	2539.2		1832.4		
722.0 4	13 3	2968.4		2246.4		
731.9 3	15 6	4017.8		3285.9		
746.6 3	25 8	3285.9		2539.2		
760.1 1	56 2	1969.9	12$^+$	1209.9	10$^+$	A$_2$=+0.48 8; A$_4$=0.0 1
772.4 3	15 8	3340.1	(15$^-$)	2567.7	(13$^-$)	

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^{92}Mo(^{54}Fe,n3pγ) 2009Ma06 (continued)

γ(^{142}Tb) (continued)

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π
776.9 *3*	19 *8*	2567.7	(13^-)	1790.7	(11^-)	877.6 *2*	44 *4*	2847.6	(14^+)	1969.9	12^+
788.5 *3*	13 *4*	4806.3		4017.8		920.4 *2*	6 *2*	5726.7		4806.3	
788.7 *2*	26 *4*	2437.3	(13^+)	1648.4	(11^+)	1060.4 *3*	6 *2*	6787.1		5726.7	
830.2[@] *3*	13 *5*	4530.4	(18^+)	3700.2	(16^+)	1200.4 *5*	2	7987.5		6787.1	
852.6 *3*	39 *6*	3700.2	(16^+)	2847.6	(14^+)						

[†] Prompt intensities for γ rays from levels above the 26–μs isomer.
[‡] Combined intensity for 81γ and 84γ.
[#] Intensity in the delayed spectrum normalized to 100 for 37.1γ.
[@] Placement of transition in the level scheme is uncertain.

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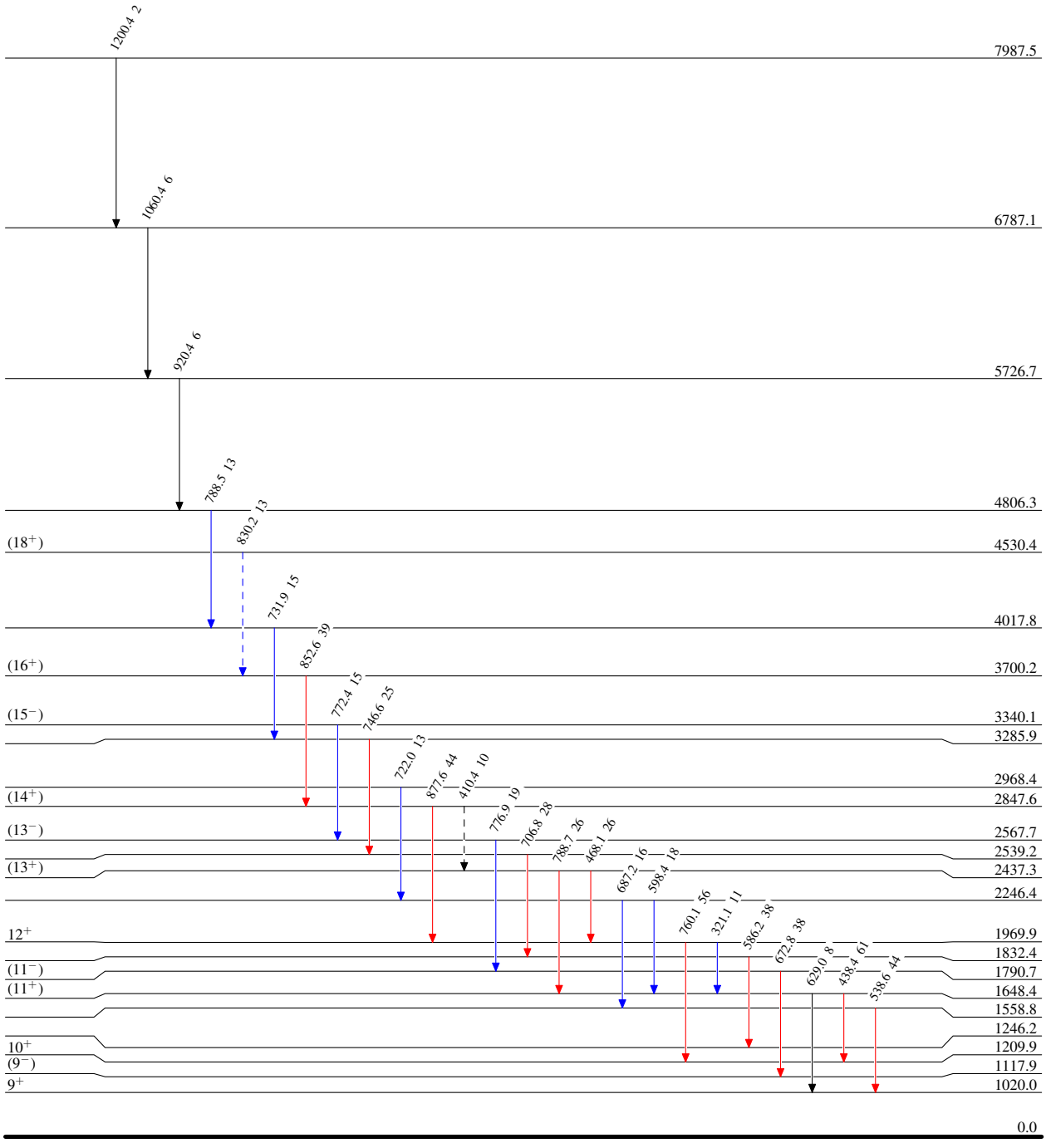
Level Scheme

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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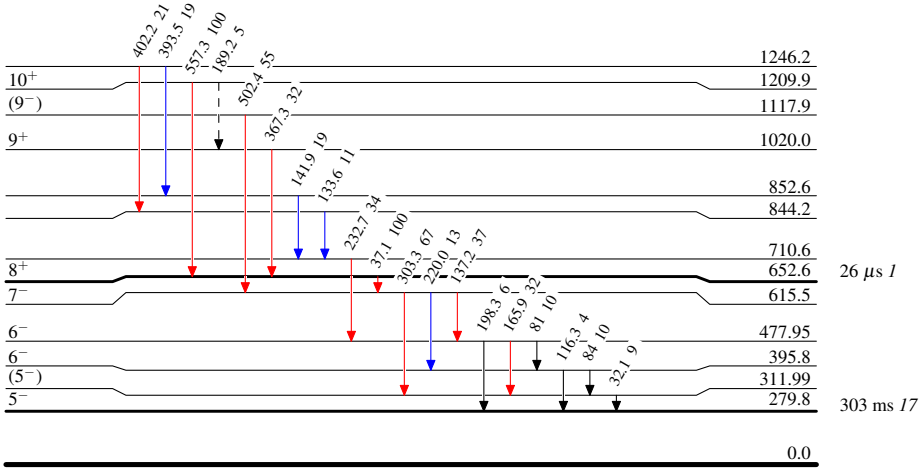
Level Scheme (continued)

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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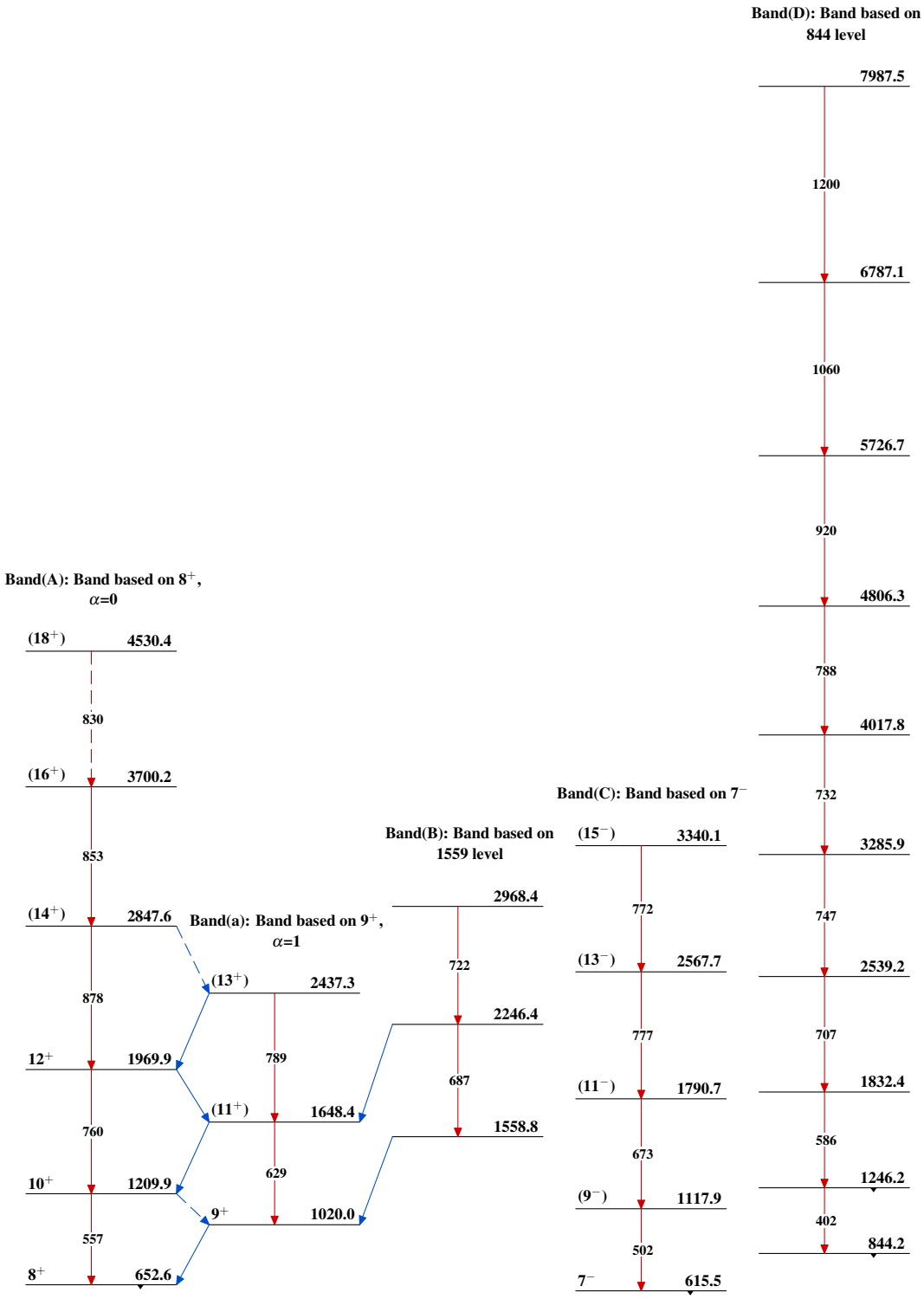

$^{142}_{65}Tb_{77}$