^{94}Mo(^{19}F,p2nγ) 1987Vi06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	G. Gürdal and F. G. Kondev	NDS 113, 1315 (2012)	1-Aug-2011

Beam: E(^{19}F)=83 MeV. Target: 3 mg/cm^2 layer of molybdenum enriched to 91.59% ^{94}Mo with a 6 mg/cm^2 lead backing. γ-rays were detected using an array of 5 HPGe detectors and 7 NaI(Tl) detectors arranged as a multiplicity filter. Measured: Eγ, Iγ, $\gamma\gamma$, $\gamma(\theta)$. Deduced: ^{110}Sn levels, mult, J^π.

^{110}Sn Levels

E(level)[†]	J$^\pi$[‡]	Comments
0.0	0^+	
1211.6 *5*	2^+	
2196.2 *7*	4^+	
2477.0 *9*	6^+	
2752.9 *10*	6^+	
3686.1 *10*	7^-	
3764.5 *10*	8^-	
3810.4 *10*	(8^+)	
3932.3 *11*	9^-	
4625.6?		E(level): No γ rays were observed to depopulate this level.
4778.3 *11*	(9^-)	
4894.1 *12*		
5107.9 *12*		
5226.5 *11*	(10^+)	configuration: Possible $\nu(h^2_{11/2})$.
6035.5 *15*	(12^+)	
6776.9 *16*	(14^+)	
7585.7 *17*	(16^+)	
8490.1 *17*	(18^+)	
9494.5 *18*	(20^+)	

[†] From least-squares fit to Eγ's.
[‡] From 1987Vi06, based on the deduced γ-ray multipolarities using $\gamma(\theta)$ and the observed band structures.

$\gamma(^{110}Sn)$

E$_\gamma$[†]	I$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[‡]	Comments
78.2 *5*	44 *5*	3764.5	8^-	3686.1	7^-		
167.6 *5*	53 *6*	3932.3	9^-	3764.5	8^-		
275.8 *5*	18 *2*	2752.9	6^+	2477.0	6^+		
280.8 *5*	85 *9*	2477.0	6^+	2196.2	4^+		
448.3 *5*	8 *1*	5226.5	(10^+)	4778.3	(9^-)	D	Mult.: A_2=−0.58 *5*, A_4=0.37 *7*, but 448.3γ was not well separated from a contaminant 449.2γ.
600.8 *5*	6 *1*	5226.5	(10^+)	4625.6?			
741.4 *5*	21 *2*	6776.9	(14^+)	6035.5	(12^+)	E2	Mult.: A_2=0.34 *3*, A_4=−0.13 *4*.
808.8[#] *5*	15[#] *2*	7585.7	(16^+)	6776.9	(14^+)	E2	Mult.: A_2=0.36 *3*, A_4=−0.18 *3*.
809[#] *1*	24[#] *3*	6035.5	(12^+)	5226.5	(10^+)	E2	Mult.: A_2=0.36 *3*, A_4=−0.18 *3*.
904.4 *5*	10 *1*	8490.1	(18^+)	7585.7	(16^+)	E2	Mult.: A_2=0.34 *8*, A_4=−0.12 *10*.
933.0 *5*	22 *2*	3686.1	7^-	2752.9	6^+		
966.2[@]	1.6 *2*	4778.3	(9^-)	3810.4	(8^+)		
984.6 *5*	95 *10*	2196.2	4^+	1211.6	2^+		
1004.4 *5*	5.0 *5*	9494.5	(20^+)	8490.1	(18^+)	E2	Mult.: A_2=0.19 *10*, A_4=−0.08 *10*.
1011.6 *5*	13 *2*	3764.5	8^-	2752.9	6^+		
1092.4 *5*	4.5 *5*	4778.3	(9^-)	3686.1	7^-	(E2)	Mult.: A_2=0.40 *12*, A_4=−0.25 *14*.

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^{94}Mo(^{19}F,p2nγ) 1987Vi06 (continued)

$\gamma(^{110}Sn)$ (continued)

E_γ [†]	I_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [‡]	Comments
1129.6 *5*	10 *1*	4894.1		3764.5	8^-		
1175.6 *5*	23 *3*	5107.9		3932.3	9^-		
1209.2 *5*	47 *5*	3686.1	7^-	2477.0	6^+	(E1)	Mult.: A_2=−0.29 *3*, A_4=−0.01 *3*.
1211.6 *5*	100 *10*	1211.6	2^+	0.0	0^+	E2	Mult.: A_2=0.31 *2*, A_4=−0.09 *2*.
1294.0 *5*	6.5 *7*	5226.5	(10^+)	3932.3	9^-	(E1)	Mult.: A_2=−0.29 *10*, A_4=0.05 *15*.
1333.4 *5*	34 *4*	3810.4	(8^+)	2477.0	6^+		

[†] From 1987Vi06. Authors stated that $\Delta E\gamma \approx 0.5$ keV. Iγ from $\gamma\gamma$ coincidences (Iγ(1211.6)=100) and $\Delta I\gamma \approx 10\%$ by the authors.
[‡] From $\gamma(\theta)$ in 1987Vi06.
[#] Multiply placed with intensity suitably divided.
[@] Placement of transition in the level scheme is uncertain.

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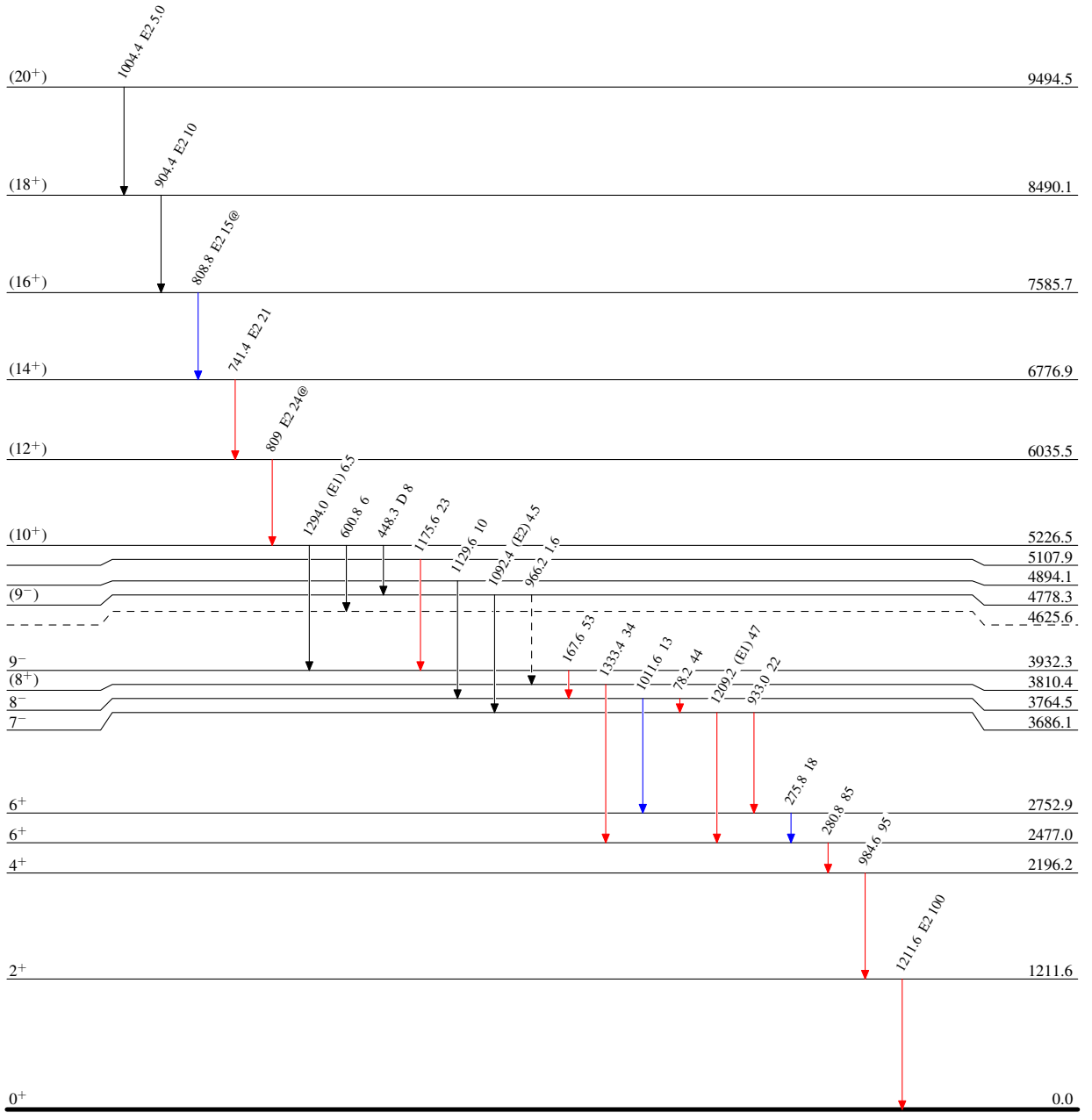
Level Scheme

Intensities: Type not specified
@ Multiply placed: intensity suitably divided

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)



$^{110}_{50}Sn_{60}$