^{100}Mo(^{14}N,4nγ) 1980Be49

History

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

E_{beam}=62 MeV. ^{14}N beam was provided by Grenoble ISN cyclotron. 1 mg/cm^2 thick, 97% enriched in ^{100}Mo target with a 30 mg/cm^2 lead backing was used. γ-rays were measured with two Ge(Li) and one Ge detectors. Measured: Eγ, Iγ, $\gamma\gamma$(t), $\gamma(\theta)$, θ from 0° to 90°, 5 angles, linear pol, E(ce).

^{110}In Levels

From delayed $\gamma\gamma$-coin results, no evidence for a short-lived isomeric state was observed.

E(level)†	J$^\pi$‡	$T_{1/2}$	Comments
0.0	7$^+$	4.92 h *8*	J$^\pi$,$T_{1/2}$: From Adopted Levels.
413.60 *16*	(7)$^+$		
714.6 *4*	(8)$^+$		
800.08 *19*	(7)$^-$		
808.20 *16*	(8)$^-$		
1018.0 *3*	(9)$^-$		
1561.9 *3*	(10)$^-$		
2129.4 *5*			
2175.2 *4*	(11)$^-$		
2492.8 *6*			
2597.3 *4*	(12)$^-$		
2765.4 *6*	(12$^-$)		
2838.6 *5*	(13$^-$)		
3193.2 *7*	(14$^-$)		
3374.4 *12*			
3513.2 *6*	(12$^+$)		
3715.0 *9*	(14$^-$)		
3720.8 *6*	(13$^+$)		
3915.4 *9*	(13$^-$)		
3944.6 *8*	(14$^+$)		
4080.4 *9*	(14$^-$)		
4230.0 *10*	(15$^+$)		
4369.0 *10*	(15$^-$)		
4532.6 *10*			
4599.1 *11*	(16$^+$)		
4801.6 *11*	(16$^-$)		
5086.2 *12*	(17$^+$)		
5282.6 *15*	(17$^-$)		
5649.6 *18*			
5652.1 *13*			

† From least-squares fit to Eγ's.
‡ From the deduced γ-ray transition multipolarities and band structure.

^{100}Mo(^{14}N,4nγ) 1980Be49 (continued)

γ(^{110}In)

Eγ[†]	Iγ[†]	Ei(level)	J^π_i	Ef	J^π_f	Mult.[#]	Comments
8.2[@]		808.20	(8)⁻	800.08	(7)⁻		
104.5 *5*	2.5 *5*	2597.3	(12)⁻	2492.8			
165.0 *5*	2.6 *6*	4080.4	(14⁻)	3915.4	(13⁻)		
207.4 *5*	8.0 *16*	3720.8	(13⁺)	3513.2	(12⁺)	M1	Mult.: A_2=−0.30 *5*, A_4=−0.02 *5*. POL=−0.23 6.
209.8 *2*	100	1018.0	(9)⁻	808.20	(8)⁻	M1	Mult.: A_2=−0.19 *4*, A_4=+0.01 *4*. POL=−0.32 3.
223.8 *5*	11.2 *22*	3944.6	(14⁺)	3720.8	(13⁺)	M1	Mult.: A_2=−0.16 *5*, A_4=+0.05 *5*. POL=−0.36 6.
241.3 *2*	34 *4*	2838.6	(13⁻)	2597.3	(12)⁻	M1	Mult.: A_2=−0.14 *4*, A_4=+0.02 *4*. POL=−0.38 4.
272.8[@]		2765.4	(12⁻)	2492.8			
285.4 *5*	14 *3*	4230.0	(15⁺)	3944.6	(14⁺)	M1	Mult.: A_2=−0.17 *6*, A_4=−0.06 *6*. POL=−0.4 1.
288.6 *5*	7.2 *14*	4369.0	(15⁻)	4080.4	(14⁻)	M1	Mult.: A_2=−0.28 *8*, A_4=+0.14 *7*.
301.2 *5*	5.8 *12*	714.6	(8)⁺	413.60	(7)⁺		Mult.: A_2=+0.08 *7*, A_4=+0.08 *7*.
354.6 *5*	16 *4*	3193.2	(14⁻)	2838.6	(13⁻)	M1	Mult.: A_2=−0.20 *6*, A_4=+0.03 *6*. POL=−0.52 9.
363.4 *5*	5.0 *10*	2492.8		2129.4			Mult.: A_2=−0.03 *10*.
367[‡] *1*	1.5 *3*	5649.6		5282.6	(17⁻)		
369.1 *5*	8.4 *16*	4599.1	(16⁺)	4230.0	(15⁺)	M1	Mult.: A_2=−0.65 *12*, A_4=+0.25 *7*. POL=−0.34 8.
386.3 *5*	7.5 *15*	800.08	(7)⁻	413.60	(7)⁺		
394.5 *2*	26 *3*	808.20	(8)⁻	413.60	(7)⁺	E1	Mult.: A_2=−0.20 *4*, A_4=+0.01 *4*. POL=+0.58 9.
413.5 *2*	41 *4*	413.60	(7)⁺	0.0	7⁺	M1	Mult.: A_2=+0.33 *3*, A_4=+0.06 *5*. POL=+0.73 9.
422.1 *2*	35 *4*	2597.3	(12)⁻	2175.2	(11)⁻	M1	A_2=−0.09 *4*, A_4=+0.02 *4*. POL=−0.32 4.
432.6 *5*	6.3 *13*	4801.6	(16⁻)	4369.0	(15⁻)	(M1)	Mult.: A_2=−0.42 *10*, A_4=+0.14 *10*.
481[‡] *1*	2 *1*	5282.6	(17⁻)	4801.6	(16⁻)		Mult.: A_2=−0.36 *15*.
487.1 *5*	5.3 *11*	5086.2	(17⁺)	4599.1	(16⁺)	(M1)	Mult.: A_2=−0.45 *9*, A_4=+0.30 *15*.
521.8 *5*	13 *3*	3715.0	(14⁻)	3193.2	(14⁻)		Mult.: A_2=+0.20 *5*, A_4=+0.06 *7*. POL=+0.21 16.
543.9 *2*	62 *6*	1561.9	(10)⁻	1018.0	(9)⁻	M1	Mult.: A_2=−0.15 *4*, A_4=+0.05 *4*. POL=−0.38 3.
565.9 *5*	4.3 *9*	5652.1		5086.2	(17⁺)		
567.5 *5*	2 *1*	2129.4		1561.9	(10)⁻		
590.4 *5*	11 *3*	2765.4	(12⁻)	2175.2	(11)⁻	(M1)	Mult.: A_2=−0.32 *7*, A_4=+0.10 *6*.
609[‡] *1*	4 *1*	3374.4		2765.4	(12⁻)		
613.3 *2*	52 *5*	2175.2	(11)⁻	1561.9	(10)⁻	M1	Mult.: A_2=−0.08 *4*, A_4=+0.03 *4*. POL=−0.25 3.
714.4 *5*	13 *3*	714.6	(8)⁺	0.0	7⁺	M1	Mult.: A_2=−0.10 *6*, A_4=+0.2 *1*. POL=−0.74 20.
754[‡] *1*	5 *1*	1561.9	(10)⁻	808.20	(8)⁻		Mult.: A_2=−0.03 *10*.
800.1 *2*	29 *3*	800.08	(7)⁻	0.0	7⁺	E1	Mult.: A_2=+0.37 *3*, A_4=+0.05 *5*. POL=−0.80 25.
808.3 *2*	57 *6*	808.20	(8)⁻	0.0	7⁺	E1	Mult.: A_2=−0.15 *4*, A_4=+0.03 *3*. POL=+0.42 5.
817.6 *5*	7 *2*	4532.6		3715.0	(14⁻)		
955.7 *5*	3 *1*	3720.8	(13⁺)	2765.4	(12⁻)		Mult.: A_2=+0.05 *8*.
1035[‡] *1*	3 *1*	2597.3	(12)⁻	1561.9	(10)⁻		Mult.: A_2=+0.6 *2*.
1157.1 *5*	9 *2*	2175.2	(11)⁻	1018.0	(9)⁻	(E2)	Mult.: A_2=+0.33 *6*, A_4=−0.03 *9*.

Continued on next page (footnotes at end of table)

^{100}Mo(^{14}N,4nγ) 1980Be49 (continued)

γ(^{110}In) (continued)

E_γ †	I_γ †	E_i(level)	J^π_i	E_f	J^π_f	Mult.#	Comments
1242‡ *1*	4 *1*	4080.4	(14⁻)	2838.6	(13⁻)		Mult.: A_2=−0.3 *2*.
1318‡ *1*	2.4 *5*	3915.4	(13⁻)	2597.3	(12)⁻		
1321‡ *1*	2.8 *6*	2129.4		808.20	(8)⁻		
1337.8 *5*	6 *2*	3513.2	(12⁺)	2175.2	(11)⁻	E1	Mult.: A_2=−0.26 *10*, A_4=−0.1 *1*. POL=+0.9 4.

† From 1980Be49.
‡ ΔE=1 keV assigned by the evaluators.
# From $\gamma(\theta)$ and linear polarization in 1980Be49.
@ Placement of transition in the level scheme is uncertain.

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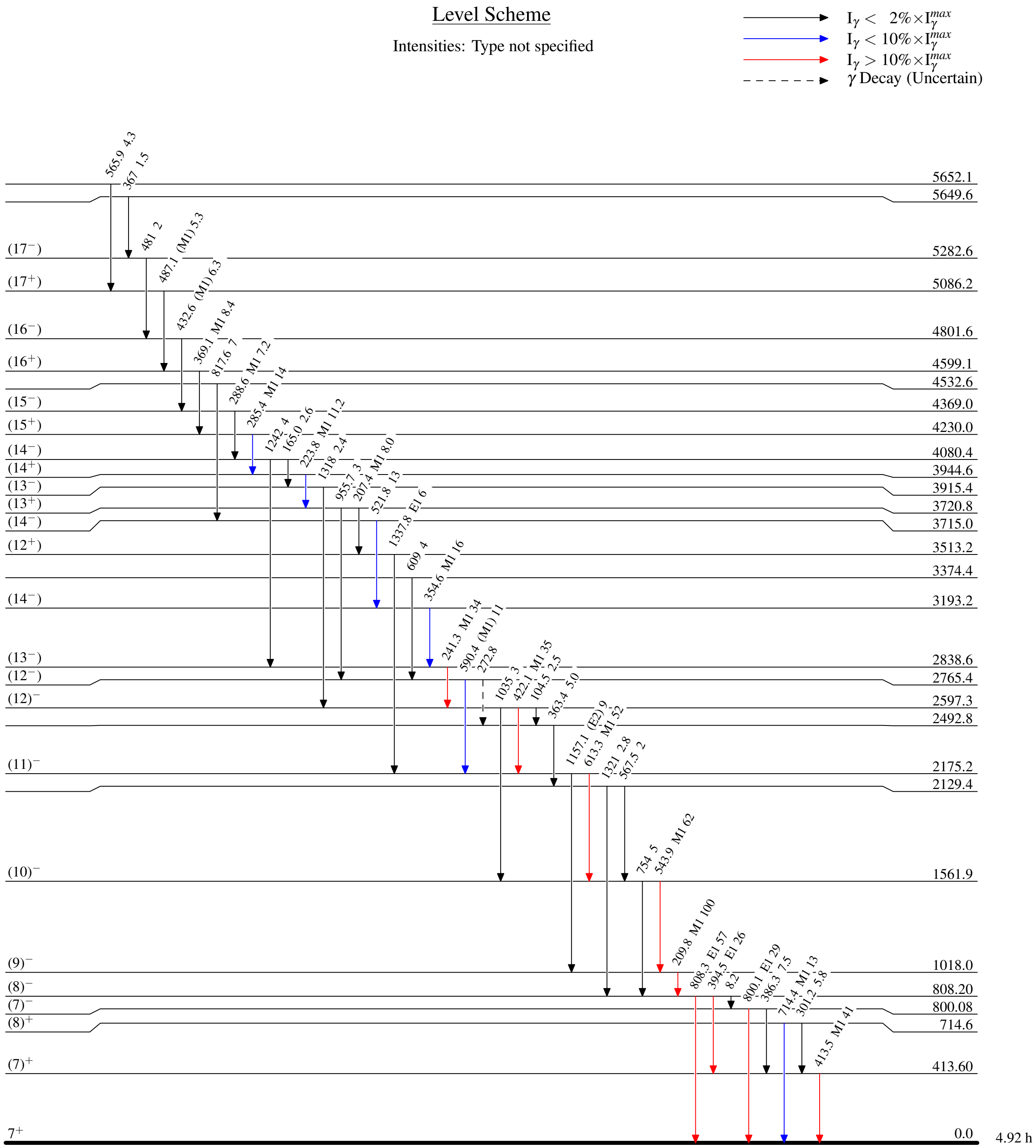
Level Scheme

Intensities: Type not specified

Legend



$^{110}_{49}In_{61}$