^{208}Pb(^{208}Pb,Xγ) 2014Ci03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 121, 561 (2014)	31-Mar-2014

High spin states in ^{210}Bi were populated from the ^{208}Pb+^{208}Pb deep-inelastic reactions, E=1446 MeV. Prompt and isomeric decays were separated with a pulsed beam of 412 ns repetition rate and of approximate width 0.3 ns. γ-ray energies were measured using Gammasphere array of 101 Compton-suppressed HPGe detectors. Measured Eγ, Iγ (not quoted), γ ray angular distributions, mean lifetime, deduced level scheme from $\gamma\gamma\gamma$ coincidences and γ ray intensity ratios of the in-beam to off-beam measurements.

^{210}Bi Levels

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$[#]	Comments
0.0	1^-		
271.31 *3*	9^-	3.04×10^6 y *6*	Additional information 1. E(level),$T_{1/2}$: From Adopted Levels.
669.3 *9*	10^-		
1322.3 *9*	(11^+)		
1473.2 *12*	(12^+)		
2725.4 *12*	(14^-)		Configuration=((π $i_{13/2}$) (ν $j_{15/2}$)) (2014Ci03).
3294.3 *14*	(13^+)		
3469.3 *14*	(15^+)	11.1 ns *7*	
4030.3 *16*	(16^+)		
4085.9 *13*	(14^-)		
4239.2 *14*	(15^-)		
4463.2 *16*	(16^-)		
4594.3 *16*	(17^-)		
4965.3 *19*	(19^-)		
5182.3 *22*			
5478.3 *24*			
5748.3 *22*			
5845.3 *24*			
5996 *3*			
x+5996		0.1 ns	E(level),$T_{1/2}$: Exact location of this isomer could not be determined. One possibility, as mentioned in 2014Ci03, was missing the low-energy transitions in the deexcitation cascades due to high internal conversion and low detection efficiency. However, 2014Ci03 note the location of this isomer to be above 6000 keV.

[†] From a least squares fit to γ-ray energies and assuming ΔE=1 keV.
[‡] From Adopted Levels up to 2725 keV. Above this level assignments are from 2014Ci03: based on γ-ray feeding, intensity, and transition character.
[#] From reported mean lifetime in 2014Ci03. Measurement procedure was not described.

γ(^{210}Bi)

Eγ	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[†]	Comments
131	4594.3	(17^-)	4463.2	(16^-)		
151	1473.2	(12^+)	1322.3	(11^+)		
153	4239.2	(15^-)	4085.9	(14^-)		
175	3469.3	(15^+)	3294.3	(13^+)	(E2)	Mult.: From α=0.70 *7* (2014Ci03).
217	5182.3		4965.3	(19^-)		
224	4463.2	(16^-)	4239.2	(15^-)		
296	5478.3		5182.3			
371	4965.3	(19^-)	4594.3	(17^-)		
398	669.3	10^-	271.31	9^-		

Continued on next page (footnotes at end of table)

^{208}Pb(^{208}Pb,Xγ) 2014Ci03 (continued)

γ(^{210}Bi) (continued)

E_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	Comments
518	5996		5478.3			
561	4030.3	(16^+)	3469.3	(15^+)		
564	4594.3	(17^-)	4030.3	(16^+)		
653	1322.3	(11^+)	669.3	10^-	(E1)	A_2=−0.20 *3*, A_4=+0.03 *3*.
663	5845.3		5182.3			
744	3469.3	(15^+)	2725.4	(14^-)	(E1)	A_2=−0.20 *3*, A_4=−0.01 *4*.
783	5748.3		4965.3	(19^-)		
1051	1322.3	(11^+)	271.31	9^-		
1252	2725.4	(14^-)	1473.2	(12^+)		
1360	4085.9	(14^-)	2725.4	(14^-)		
1403	2725.4	(14^-)	1322.3	(11^+)	(E3)	A_2=+0.41 *1*, A_4=+0.04 *1*.
1514	4239.2	(15^-)	2725.4	(14^-)		
1821	3294.3	(13^+)	1473.2	(12^+)		
2613	4085.9	(14^-)	1473.2	(12^+)		

[†] From γ-ray angular distribution measurements (2014Ci03).

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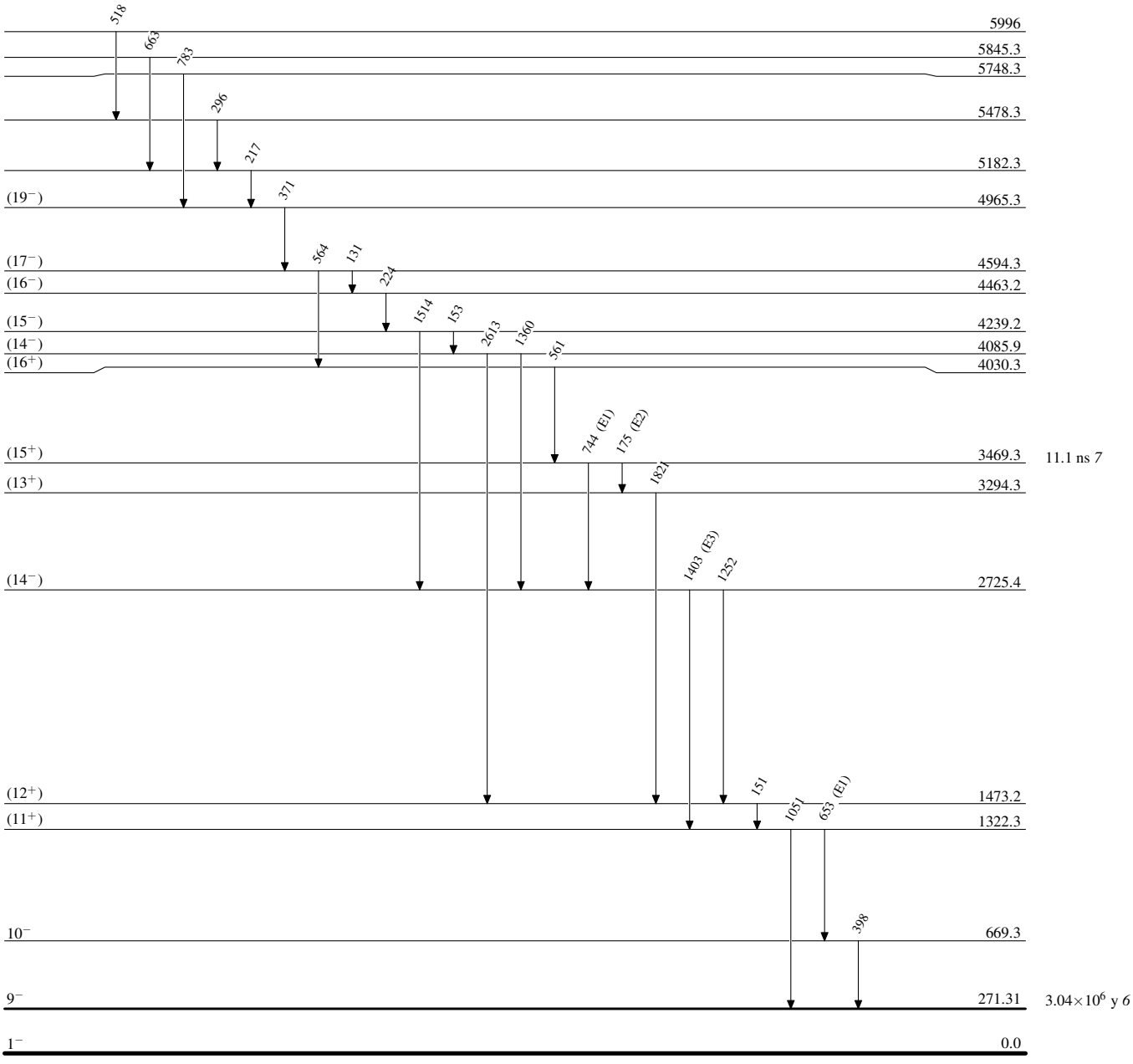
Level Scheme



$^{210}_{83}Bi_{127}$