^{206}Pb(^{48}Ca,3nγ) 2006He27

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 114, 1041 (2013)	1-Jan-2012

^{251}No isotope produced by the ^{206}Pb(^{48}Ca,3n) reaction at E=4.80 MeV/nucleon. Reaction products were separated from the primary beam by the SHIP velocity filter and implanted into a position-sensitive 16-strip PIPS detector.
Measured Eγ, γ(residues)(t), lifetimes with a 'Clover' detector. An isomer with a half-life of ≈2 μs has been discovered by 2006He27.
Level scheme above the 203-keV level is tentative.

^{251}No Levels

E(level)	J$^\pi$	T$_{1/2}$	Comments
0.0[†]	(7/2$^+$)	0.80 s *1*	T$_{1/2}$: from 2006He27. Possible configuration=7/2[624] (2006He27).
60.7[†] *7*	(9/2$^+$)		
106 *6*	(1/2$^+$)	1.02 s *3*	%α≈100 %α: assumed only α decay mode since no γ transitions were observed. Isomer produced by ^{206}Pb(^{48}Ca,3n), E=4.80 MeV/A (2006He27,2004He28). Reaction products were separated from the primary beam by the SHIP velocity filter and implanted into a position-sensitive 16-strip PIPS detector. E(level): based upon difference in measured Q(β^-)values for decays to the 1/2$^+$ state in ^{247}Fm from the ground and 1/2$^+$ isomer in ^{251}No (2006He27). Other: ≈87 keV (2004He28). T$_{1/2}$: from 2006He27. Other: 0.93 s *6* (2004He28). J$^\pi$: proposed configuration=1/2[631] (2006He27,2004He28).
203.1 *5*	(9/2$^-$)		Possible configuration=9/2[734] (2006He27).
916.7? *7*	(7/2$^+$)		E(level): 985.6 *8* for reverse ordering of the 782.5-713.6 cascade. Possible configuration=7/2[613] (2006He27).
1699.2? *9*			
1699.2+x?		≈2 μs	E(level): 2006He27. T$_{1/2}$: from γ(residues)(t) (2006He27,2005SuZX).

[†] Band(A): 7/2[624] band.

γ(^{251}No)

E$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[#]	α[†]	Comments
x[@]	1699.2+x?		1699.2?				E$_\gamma$: expected to be a highly-converted transition.
(60.7)	60.7	(9/2$^+$)	0.0	(7/2$^+$)			Transition not seen in 2006He27, expected to be highly converted.
142.4 *5*	203.1	(9/2$^-$)	60.7	(9/2$^+$)	(E1)	0.0679 *12*	α(L)=0.0506 *9*; α(M)=0.01267 *21*; α(N+..)=0.00462 *8* α(N)=0.00354 *6*; α(O)=0.000919 *16*; α(P)=0.000157 *3*; α(Q)=5.21×10^{-6} *9*
203.1 *5*	203.1	(9/2$^-$)	0.0	(7/2$^+$)	E1	0.1149 *18*	α(K)=0.0862 *13*; α(L)=0.0214 *4*; α(M)=0.00533 *9*; α(N+..)=0.00195 *3* α(N)=0.001490 *23*; α(O)=0.000390 *6*; α(P)=6.87×10^{-5} *11*; α(Q)=2.53×10^{-6} *4*
713.6[‡@] *5*	916.7?	(7/2$^+$)	203.1	(9/2$^-$)			
782.5[‡@] *6*	1699.2?		916.7?	(7/2$^+$)			

[†] Additional information 1.
[‡] The ordering of the 782.5-713.6 cascade is not known.

Continued on next page (footnotes at end of table)

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$\gamma(^{251}No)$ (continued)

From ce data in ^{255}Rf α decay (2006He27).
@ Placement of transition in the level scheme is uncertain.

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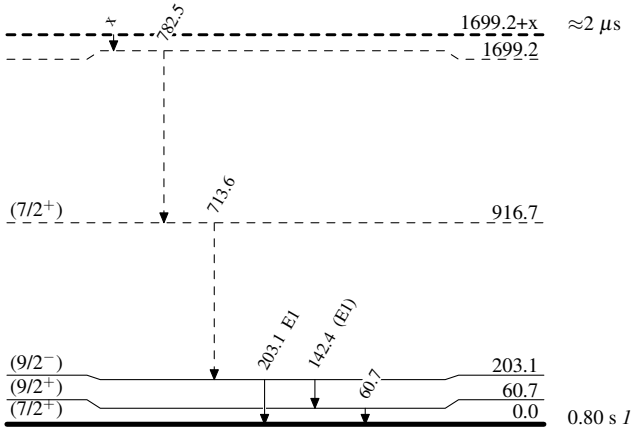
Legend

Level Scheme



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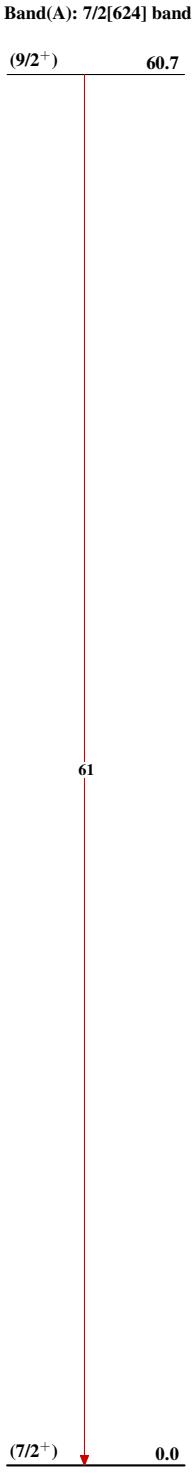

$^{251}_{102}No_{149}$