^{160}Dy(^{36}Ar,3nγ) 1999He32,1997Fo06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 143, 1 (2017)	31-Mar-2017

Includes Er(^{32}S,xnγ) E=164 MeV from 1997Fo06.

1999He32: ^{160}Dy(^{36}Ar,3nγ) E=178 MeV; gas-filled recoil fragment separator (RITU); DORIS multi-detector array for γ-ray detection; position sensitive Si detector for recoil identification, α-ray detection, and α-γ correlation studies. Recoil-decay tagging and recoil gating methods. Measured Eγ, Iγ, α-tagged γ coincidence matrix, and $\gamma\gamma$ coincidences. Deduced levels and suggest J^π values.

1997Fo06: Er(^{32}S,xnγ) E=164 MeV; recoil fragment mass separator; (recoil)γ and (recoil)$\gamma\gamma$. Measured Eγ. The 234 keV γ-ray reported in this work is not confirmed by 1999He32.

^{193}Po Levels

Level scheme built on the basis of γ-ray energies and intensities, and $\gamma\gamma$ coincidences from 1999He32. Energy of the (13/2$^+$) level was kept fixed. Band structure and tentative J^π assignments proposed by 1999He32.

E(level)[†]	J$^\pi$	T$_{1/2}$	Comments
100[‡] *6*	(13/2$^+$)	245 ms *11*	%α≤100 Additional information 1. E(level),J$^\pi$,T$_{1/2}$: From Adopted Levels.
351.3[‡] *5*	(17/2$^+$)		
375.0?[#] *5*	(15/2$^+$)		
712.1[‡] *7*	(21/2$^+$)		
744.3?[#] *8*	(19/2$^+$)		
1175.8[‡] *9*	(25/2$^+$)		
1229.7?[#] *10*	(23/2$^+$)		

[†] From a least-squares fit to γ-ray energies, (13/2$^+$) state at 100 keV *6* kept fixed.
[‡] Band(A): Band based on (13/2$^+$). Intraband transitions identified from (13/2$^+$) α-decay tagged coincidences.
[#] Band(B): Band based on (15/2$^+$). Tentative arrangement based on energy sums.

γ(^{193}Po)

Two distinct γ-ray groups identified on the basis of prompt singles γ-ray spectra obtained by gating with α decays of the (3/2$^-$) and (13/2$^+$) ^{193}Po states, respectively.

E$_\gamma$[†]	I$_\gamma$[†@]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
[x]206.7[‡] *5*	100[&] *20*					
251.4[#] *5*	100 *7*	351.3	(17/2$^+$)	100	(13/2$^+$)	Eγ=251 keV *1* (1997Fo06).
274.9[#a] *5*	21 *4*	375.0?	(15/2$^+$)	100	(13/2$^+$)	
[x]349.1[‡] *5*	100[&] *40*					
360.9[#] *5*	59 *7*	712.1	(21/2$^+$)	351.3	(17/2$^+$)	
[x]367[‡] *1*	50[&] *20*					
369[#a] *1*	18 *5*	744.3?	(19/2$^+$)	375.0?	(15/2$^+$)	Eγ=368 keV *1* (1997Fo06).
393[#a] *1*	15 *4*	744.3?	(19/2$^+$)	351.3	(17/2$^+$)	
463.7[#] *5*	22 *6*	1175.8	(25/2$^+$)	712.1	(21/2$^+$)	

Continued on next page (footnotes at end of table)

^{160}Dy(^{36}Ar,3nγ) 1999He32,1997Fo06 (continued)

$\gamma(^{193}Po)$ (continued)

E_γ †	I_γ †@	E_i(level)	J_i^π	E_f	J_f^π	Comments
485#a *1*	15 *5*	1229.7?	$(23/2^+)$	744.3?	$(19/2^+)$	1997Fo06 report a 486 keV γ ray placed from tentative levels 1105 to 619 in their level scheme, not confirmed by 1999He32.
518#a *1*		1229.7?	$(23/2^+)$	712.1	$(21/2^+)$	
x549# *1*	12 *4*					
x574# *1*	7 *3*					

† From 1999He32.
‡ Placement above the $(3/2^-)$ level on the basis of $3/2^-$ α-decay tagged coincidences.
# Placement above the $(13/2^+)$ level on the basis of $13/2^+$ α-decay tagged coincidences.
@ Intensities normalized to 100 for the 251.4 keV γ ray, except where noted.
& Intensities normalized to 100 for the 206.7 keV γ ray.
a Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

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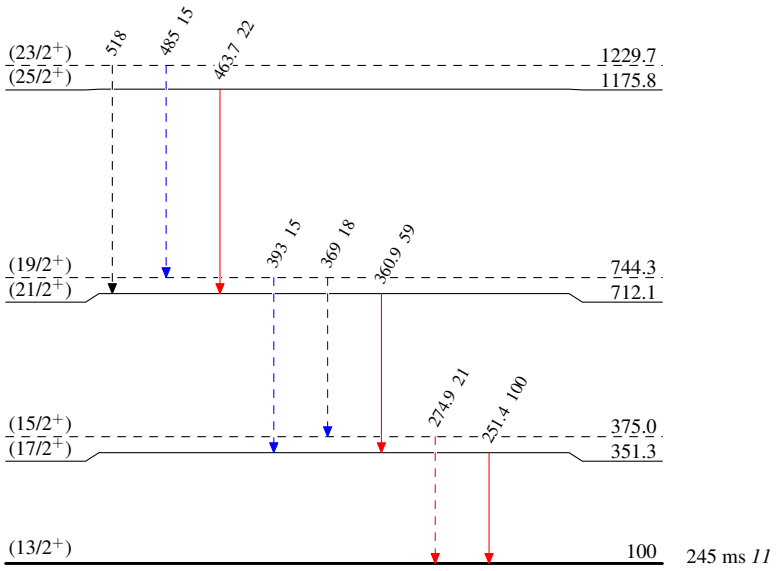
Level Scheme

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)



$^{193}_{84}Po_{109}$

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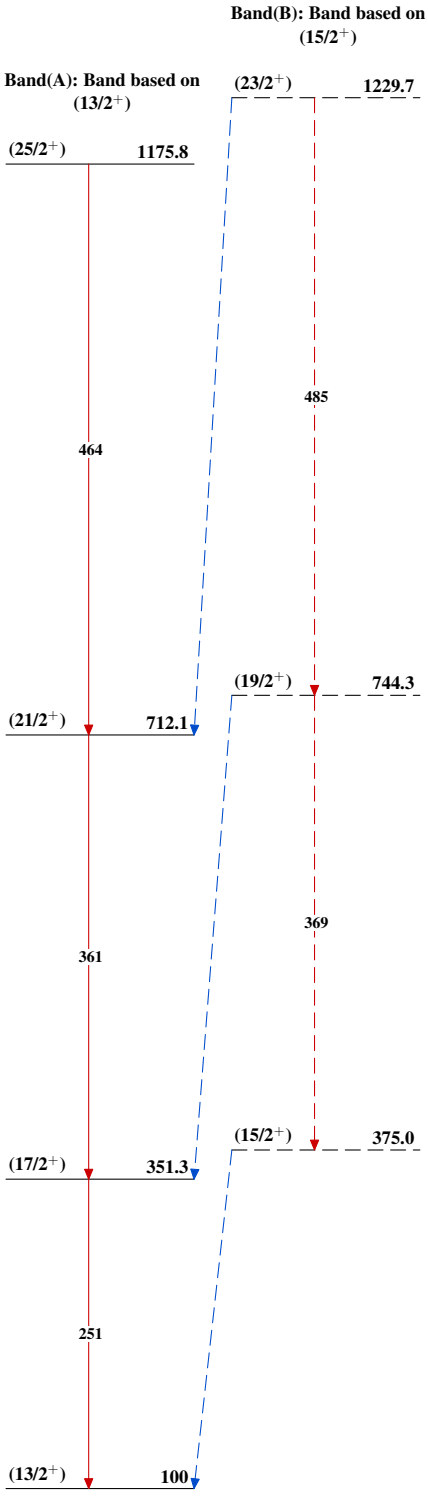

$^{193}_{84}Po_{109}$