

$^{154}\text{Gd}(^{36}\text{Ar},4n\gamma)$  1993Ba52,1993He05

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. C. Batchelder and A. M. Hurst, M. S. Basunia		NDS 183, 1 (2022)	1-Mar-2022

Others: 1998Ba88, 1993He02.

No significant change compared to previous evaluation (2003Ba44).

1993Ba52: E=174 MeV; 66.5%  $^{154}\text{Gd}$  target, fragment mass analyzer, Compton-suppressed Ge detector array (10 detectors); measured  $E\gamma$ ,  $I\gamma$ , recoil- $\gamma$ - $\gamma$  coin, recoil- $\gamma$  coin,  $\gamma(\theta)$ .

1993He05, 1993He02: E=175 MeV; Compton-suppressed Ge detectors, 48-element BGO  $\gamma$ -multiplicity filter; measured  $E\gamma$ ,  $\gamma\gamma$  coin, recoil- $\gamma\gamma$  coin, x- $\gamma$  coin.

The level scheme is from 1993Ba52.

 $^{186}\text{Pb}$  Levels

E(level) <sup>†</sup>	$J^{\pi}$ <sup>‡</sup>
0.0	0 <sup>+</sup>
662.4@ 5	(2 <sup>+</sup> )
923.0@ 5	(4 <sup>+</sup> )
1260.0@ 6	(6 <sup>+</sup> )
1675.1@ 8	(8 <sup>+</sup> )
2160.9@ 9	(10 <sup>+</sup> )
2711.4#@ 10	(12 <sup>+</sup> )
3313.9?@ 13	(14 <sup>+</sup> )

<sup>†</sup> From  $E\gamma$ .

<sup>‡</sup> From 1993Ba52. Energy order of  $\gamma$  cascade is based on  $I\gamma$ ; resulting E(level) is then analogous to even-J yrast band in  $^{184}\text{Hg}$  isotone.

# A 532 $\gamma$  was tentatively placed from this band member by 1993He05; placement not adopted.

@ Band(A):  $K^{\pi}=0^{+}$  band.

 $\gamma(^{186}\text{Pb})$ 

Recoil- $\gamma(\theta)$  is isotropic within statistical uncertainties, presumably as a result of reorientation (1993Ba52).

$E\gamma$ <sup>†</sup>	$I\gamma$ <sup>†</sup>	$E_i(\text{level})$	$J_i^{\pi}$	$E_f$	$J_f^{\pi}$
260.6 3	85 3	923.0	(4 <sup>+</sup> )	662.4	(2 <sup>+</sup> )
337.0 3	85 3	1260.0	(6 <sup>+</sup> )	923.0	(4 <sup>+</sup> )
415.1 <sup>‡</sup> 5	75 4	1675.1	(8 <sup>+</sup> )	1260.0	(6 <sup>+</sup> )
485.8 5	24 3	2160.9	(10 <sup>+</sup> )	1675.1	(8 <sup>+</sup> )
<sup>x</sup> 532#					
550.5 5	18 3	2711.4	(12 <sup>+</sup> )	2160.9	(10 <sup>+</sup> )
602.5@ 8	5 3	3313.9?	(14 <sup>+</sup> )	2711.4	(12 <sup>+</sup> )
662.4 5	100 4	662.4	(2 <sup>+</sup> )	0.0	0 <sup>+</sup>

<sup>†</sup> From 1993Ba52.

<sup>‡</sup>  $E\gamma=413$  in 1993He05.

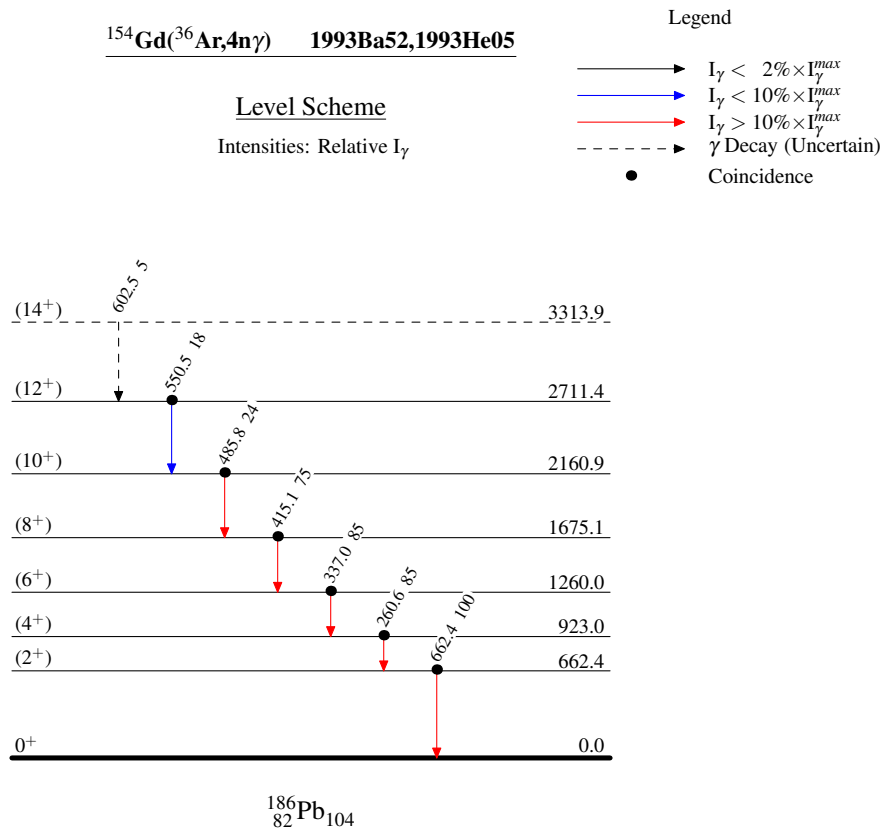
Continued on next page (footnotes at end of table)

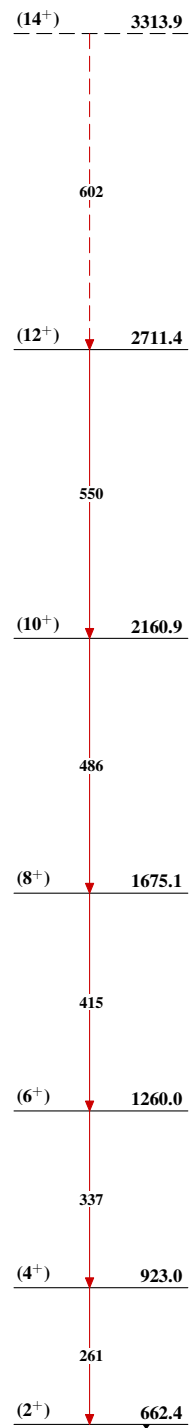
$^{154}\text{Gd}(^{36}\text{Ar},4n\gamma)$  **1993Ba52,1993He05** (continued) $\gamma(^{186}\text{Pb})$  (continued)

# From **1993He05**;  $\gamma$  not reported by **1993Ba52**, **2003Re33**, **2005Pa42**, **2007Pa05**.

@ Placement of transition in the level scheme is uncertain.

<sup>x</sup>  $\gamma$  ray not placed in level scheme.



$^{154}\text{Gd}(^{36}\text{Ar},4n\gamma)$  1993Ba52,1993He05Band(A):  $K^\pi=0^+$  band $^{186}_{82}\text{Pb}_{104}$