

$^{154}\text{Gd}(^{40}\text{Ar},4n\gamma)$  1979Ro06

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, <sup>1</sup> and Jun Chen <sup>2</sup>		NDS 169, 1 (2020)	15-Oct-2020

Includes  $^{158}\text{Gd}(^{36}\text{Ar},4n\gamma)$  from 1985St16.

**1979Ro06:** E=195 MeV  $^{40}\text{Ar}$  beam was produced from the ALICE facility at Orsay. Target was 5 mg/cm<sup>2</sup> self-supporting  $^{154}\text{Gd}$  target (93.35% enriched).  $\gamma$  rays were detected with two Ge(Li) detectors. Measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin. Deduced levels.

Comparisons with shell-model calculations. Also studies  $^{190}\text{Pb}$  with  $^{156}\text{Gd}(^{40}\text{Ar},6n\gamma)$  at E=225 MeV.

**1985St16:**  $^{158}\text{Gd}(^{36}\text{Ar},4n\gamma)$  E=175 MeV  $^{36}\text{Ar}$  beam was produced from the accelerator combination VICKI. Target was 2 mg/cm<sup>2</sup> isotopically enriched  $^{158}\text{Gd}$ .  $\gamma$  rays were detected with a Ge(Li) and a HPGe detectors. Measured  $E_\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(t)$ . Deduced isomer  $T_{1/2}$ , transition strength.

The 338-454-540-507-773 cascade proposed by 1979Ro06 has been reordered as 338-540-507-455-773 in accordance with the results from  $^{166}\text{Er}(^{28}\text{Si},4n\gamma)$  (1998Dr06, 2001Dr05).

See the detailed level scheme in that dataset.

 $^{190}\text{Pb}$  Levels

E(level) <sup>†</sup>	$J^\pi$ <sup>‡</sup>	$T_{1/2}$	Comments
0	0 <sup>+</sup>		
773	2 <sup>+</sup>		
1227	(4) <sup>+</sup>		
1734	(6) <sup>+</sup>		
2274	(8) <sup>+</sup>		
2612	(10) <sup>+</sup>		
2612+x	(12 <sup>+</sup> )		
2655	(11) <sup>-</sup>	7.9 $\mu\text{s}$	$J^\pi$ : 12 <sup>+</sup> proposed by 1979Ro06 for a level of unknown energy probably corresponds to 2612+x level. $T_{1/2}$ : from $\gamma(t)$ of the summed 773 $\gamma$ , 507 $\gamma$ , 540 $\gamma$ and 454 $\gamma$ (1985St16).

<sup>†</sup> From  $E_\gamma$  data.

<sup>‡</sup> From the Adopted Levels.

 $\gamma(^{190}\text{Pb})$ 




$E_\gamma$	$I_\gamma$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Comments
43.2		2655	(11) <sup>-</sup>	2612	(10) <sup>+</sup>	$E_\gamma$ : from 1998Dr06.
338	30 8	2612	(10) <sup>+</sup>	2274	(8) <sup>+</sup>	
454	65 10	1227	(4) <sup>+</sup>	773	2 <sup>+</sup>	
507	85 20	1734	(6) <sup>+</sup>	1227	(4) <sup>+</sup>	
540	68 15	2274	(8) <sup>+</sup>	1734	(6) <sup>+</sup>	
773	100	773	2 <sup>+</sup>	0	0 <sup>+</sup>	

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## Level Scheme

Intensities: Relative  $I_\gamma$ 

## Legend

-   $I_\gamma < 2\% \times I_\gamma^{\max}$
-   $I_\gamma < 10\% \times I_\gamma^{\max}$
-   $I_\gamma > 10\% \times I_\gamma^{\max}$

