

$^{102}\text{Y}$   $\beta^-$  decay (0.36 s) [1991Hi02](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	D. De Frenne	NDS 110, 1745 (2009)	31-Dec-2008

Parent:  $^{102}\text{Y}$ :  $E=0.0+x$ ;  $T_{1/2}=0.36$  s 4;  $Q(\beta^-)=9850$  70;  $\% \beta^-$  decay=100.0

Assignment: mass and charge separation of fission fragments from  $^{235}\text{U}(n,F)$ ; (K x ray) $\gamma$ -coincidences. Measured:  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ , (K x ray) $\gamma$ -coin,  $T_{1/2}$  deduced:  $^{102}\text{Zr}$  levels.

Others: [1991Hi02](#) supersedes [1974GrZN](#).

From systematics, the existence of two Y isomers is expected. The production method ( $^{235}\text{U}(n,F)$ ) favors the high-spin isomer, so probably mainly the decay of the high-spin  $^{102}\text{Y}$  isomer has been observed by [1983Sh13](#). Existence of two  $^{102}\text{Y}$  isomers has been confirmed by the different  $I(152\gamma)/I(326\gamma)$  ratios given by [1983Sh13](#) and [1991Hi02](#). However in a recent paper of [2007Ch07](#) a high spin isomer is not mentioned.

[1992Ba28](#) performed  $\beta$ - $\gamma$  coincidences.

 $^{102}\text{Zr}$  Levels

E(level) <sup>†</sup>	$J^\pi$ <sup>‡</sup>
0.0	0 <sup>+</sup>
151.77 13	2 <sup>+</sup>
478.41 20	4 <sup>+</sup>
965.2 6	6 <sup>+</sup>
1211.04 13	(2 <sup>+</sup> )
1243.1? 6	
1822.5? 8	
1982.3 9	

<sup>†</sup> From a least-squares procedure using measured gammas.

<sup>‡</sup> From Adopted Levels.

 $\gamma(^{102}\text{Zr})$ 

$E_\gamma$ <sup>‡</sup>	$I_\gamma$ <sup>‡</sup>	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Comments
151.73 14	79 10	151.77	2 <sup>+</sup>	0.0	0 <sup>+</sup>	
159.8 <sup>†</sup> 1	8.0 8	1982.3		1822.5?		
326.64 15	42 3	478.41	4 <sup>+</sup>	151.77	2 <sup>+</sup>	$I(152\gamma)/I(326\gamma)=2.3$ 2.
486.8 <sup>†</sup> 2	6.7 11	965.2	6 <sup>+</sup>	478.41	4 <sup>+</sup>	
579.4 <sup>†</sup> 2	28 3	1822.5?		1243.1?		
1059.21 18	8 3	1211.04	(2 <sup>+</sup> )	151.77	2 <sup>+</sup>	
1091.3 <sup>†</sup> 3	33 3	1243.1?		151.77	2 <sup>+</sup>	
1211.08 16	11 4	1211.04	(2 <sup>+</sup> )	0.0	0 <sup>+</sup>	

<sup>†</sup>  $\Delta E_\gamma$  from [1983Sh13](#).

<sup>‡</sup> From [1991Hi02](#).

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## Decay Scheme

Intensities: Relative  $I_\gamma$ 

## Legend

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

