

$^{156}\text{Pm}$  IT decay (<5 s) 2007Sh05

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. W. Reich	NDS 113, 2537 (2012)	1-Mar-2012

Parent:  $^{156}\text{Pm}$ : E=150.3 I;  $J^\pi=1^{(+)}$ ;  $T_{1/2}<5$  s; %IT decay $\approx$ 98.0

Additional information 1.

Unless noted otherwise, the values are those reported by 2007Sh05.

Isomer proposed by 2007Sh05 from analysis of the decay of the  $\gamma$ 's and ce's from the  $\beta^-$  decay of isotope-separated  $^{156}\text{Nd}$  sources.  $\gamma$ 's detected using a HPGe detector and a short coaxial detector. Conversion electrons detected using a cooled Si(Li) detector. Measured  $E_\gamma$ ,  $I_\gamma$ , Ice, M,  $T_{1/2}$ .

 $^{156}\text{Pm}$  Levels

E(level)	$J^\pi^\dagger$	$T_{1/2}$	Comments
0 $^\ddagger$	4 $^{(+)}$	26.70 s 10	$J^\pi, T_{1/2}$ : From the adopted values.
150.3 $^\#$ I	1 $^{(+)}$	<5 s	$J^\pi, T_{1/2}$ : From the adopted values. $T_{1/2}$ : From 2007Sh05. From a careful analysis of the decay curve of the K-line of the 150.3 $\gamma$ , 2007Sh05 suggest the possible presence of a second activity, in addition to that of the g.s., with $T_{1/2} = 2.3$ s 20. They assign it to the decay of an isomeric state at 150.3 keV.

$^\dagger$  From the adopted values.

$^\ddagger$  Band(A): Probable  $\pi 5/2[532]+\nu 3/2[521]$  bandhead. 2007Sh05 report a different neutron orbital for this configuration. See the discussion in the  $^{156}\text{Nd}$   $\beta^-$  Decay data set.

$^\#$  Band(B): Probable  $\pi 5/2[532]-\nu 3/2[521]$  bandhead. See the comment on the conf for the g.s.

 $\gamma(^{156}\text{Pm})$ 

$E_\gamma$	$I_\gamma^\ddagger$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult. $^\dagger$	$\alpha^\#$	Comments
150.3 I	100	150.3	1 $^{(+)}$	0	4 $^{(+)}$	M3	20.5	$\alpha(\text{K})_{\text{exp}}=14$ 4; $\alpha(\text{L})_{\text{exp}}=4.5$ 15 $\alpha(\text{K})=13.63$ 20; $\alpha(\text{L})=5.29$ 8; $\alpha(\text{M})=1.255$ 18; $\alpha(\text{N}+..)=0.324$ 5 $\alpha(\text{N})=0.283$ 4; $\alpha(\text{O})=0.0397$ 6; $\alpha(\text{P})=0.001719$ 25

$^\dagger$  From  $\alpha(\text{K})_{\text{exp}}$ ,  $\alpha(\text{L})_{\text{exp}}$ .

$^\ddagger$  For absolute intensity per 100 decays, multiply by  $\approx 0.0456$ .

$^\#$  Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on  $\gamma$ -ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

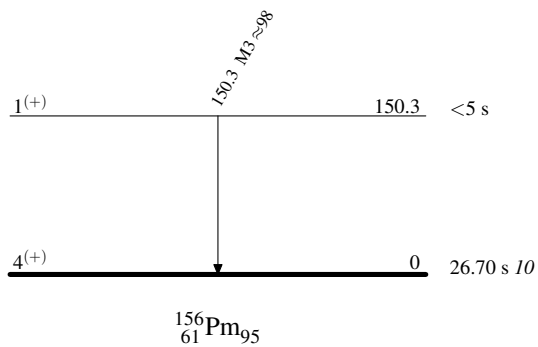
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Decay Scheme

Intensities:  $I_{(\gamma+ce)}$  per 100 parent decays  
%IT $\approx$ 98.0



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Band(A): Probable $\pi 5/2[532]+\nu 3/2[521]$ bandhead		Band(B): Probable $\pi 5/2[532]-\nu 3/2[521]$ bandhead	
<u>4(+)</u>	0	1(+)	150.3

 $^{156}_{61}\text{Pm}_{95}$