

$^{138}\text{Gd}$   $\varepsilon$  decay [1999Xi04](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 146, 1 (2017)	30-Sep-2017

Parent:  $^{138}\text{Gd}$ :  $E=0$ ;  $J^\pi=0^+$ ;  $T_{1/2}=4.7$  s 9;  $Q(\varepsilon)=5950$  SY;  $\% \varepsilon + \% \beta^+$  decay=100.0

$^{138}\text{Gd}$ - $T_{1/2}$ : from  $\gamma(t)$  gated by Eu- $K_\alpha$  X rays ([1999Xi04](#)), adopted in Adopted Levels of  $^{138}\text{Gd}$ .

$^{138}\text{Gd}$ - $Q(\varepsilon)$ : From [2017Wa10](#),  $\Delta Q=200$  (syst).

[1999Xi04](#):  $^{138}\text{Gd}$  source was produced via  $^{106}\text{Cd}(^{36}\text{Ar},3n)$  with  $E=220$  MeV  $^{36}\text{Ar}$  beam provided by the SFC cyclotron of HIRFL (Heavy Ion Research Facility in Lanzhou) incident on a  $2.5$  mg/cm<sup>2</sup> thick enriched  $^{106}\text{Cd}$  target. A helium-jet was coupled to the Tape system.  $\gamma$  rays were detected with two coaxial HPGe detectors and X rays were detected with a HPGe planar detector. Measured  $E_\gamma$ , X $\gamma$ -coin,  $\gamma(t)$ . Deduced levels, parent half-life..

 $^{138}\text{Eu}$  Levels

E(level) <sup>†</sup>	Comments
0+y	<a href="#">Additional information 1.</a>
64.70+y 20	
293.0+y 3	
297.5+y 4	
310.7+y 4	
356.4+y 3	
376.0+y 4	
584.8+y 3	

<sup>†</sup> From a least-squares fit to  $\gamma$ -ray energies.

 $\gamma(^{138}\text{Eu})$ 

$E_\gamma$	$E_i(\text{level})$	$E_f$
64.7 2	64.70+y	0+y
228.3 2	293.0+y	64.70+y
228.4 3	584.8+y	356.4+y
232.8 3	297.5+y	64.70+y
246.0 3	310.7+y	64.70+y
291.7 2	356.4+y	64.70+y
311.3 3	376.0+y	64.70+y
520.1 3	584.8+y	64.70+y

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Decay Scheme

