Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 200,2 (2025)	22-Aug-2022

Q(β^-)=5640 *syst*; S(n)=5380 *syst*; S(p)=13450 *syst*; Q(α)=−4760 *syst* 2021Wa16
ΔQ(β^-)=220, ΔS(n)=280, ΔS(p)=360, ΔQ(α)=200 (syst,2021Wa16).
S(2n)=9380 *280*, S(2p)=25190 *450*, Q(β^-n)=1280 *200* (syst,2021Wa16).
2017Wu04: The ^{154}Ce nuclide was produced at the RIBF-RIKEN facility using the ^{9}Be(^{238}U,F) reaction at E=345 MeV/nucleon. Two experiments, optimized for the transmission of ^{158}Nd and ^{170}Dy ions, were carried out with average beam intensities of 7 pnA and 12 pnA, respectively. The identification of the nuclide of interest was made in the BigRIPS separator by determining the atomic number and the mass-to-charge ratio of the ion using the tof-Bρ-ΔE method. The reaction products were transported through the ZeroDegree Spectrometer and implanted into the beta-counting system WAS3ABi that was surrounded by the EURICA array comprising of 84 HPGe detectors. The typical implantation rate was 100 ions/s. Measured: implanted ion-β^--t, implanted ion-β^--γ-t and implanted ions-γ-t correlations. Deduced: $T_{1/2}$.
Others: 1997Be12 and 1994Be24.

^{154}Ce Levels

Cross Reference (XREF) Flags

A ^{252}Cf,^{248}Cm SF decay

E(level)†	J$^\pi$‡	$T_{1/2}$	XREF	Comments
0.0#	0$^+$	0.722 s *14*	A	%β^-=100; %β^-n=? %β^-: Only β^- decay mode is expected. $T_{1/2}$: From 2017Wu04, using a fit to the implanted ion-β^--t spectrum using the least-squares and maximum-likelihood methods. The data analysis included contributions from the parent, daughter and ground-daughter decays, as well as a constant background.
76.30# *15*	(2$^+$)		A	
252.30# *18*	(4$^+$)		A	
520.60# *21*	(6$^+$)		A	
872.9# *3*	(8$^+$)		A	

† From least-squares fit to γ energies.
‡ From 2020Ur03 (^{252}Cf,^{248}Cm SF decay) based on the assumption that this is the yrast g.s. band.
# Band(A): Yrast g.s. band.

γ(^{154}Ce)

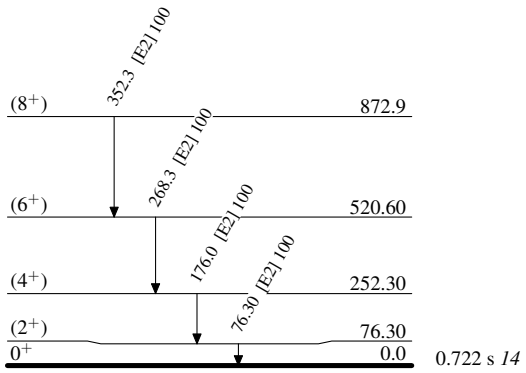
E_i(level)	J_i^π	E_γ†	I_γ†	E_f	J_f^π	Mult.
76.30	(2$^+$)	76.30 *15*	100	0.0	0$^+$	[E2]
252.30	(4$^+$)	176.0 *1*	100	76.30	(2$^+$)	[E2]
520.60	(6$^+$)	268.3 *1*	100	252.30	(4$^+$)	[E2]
872.9	(8$^+$)	352.3 *2*	100	520.60	(6$^+$)	[E2]

† From 2020Ur03, ^{252}Cf,^{248}Cm SF decay.

Adopted Levels, Gammas

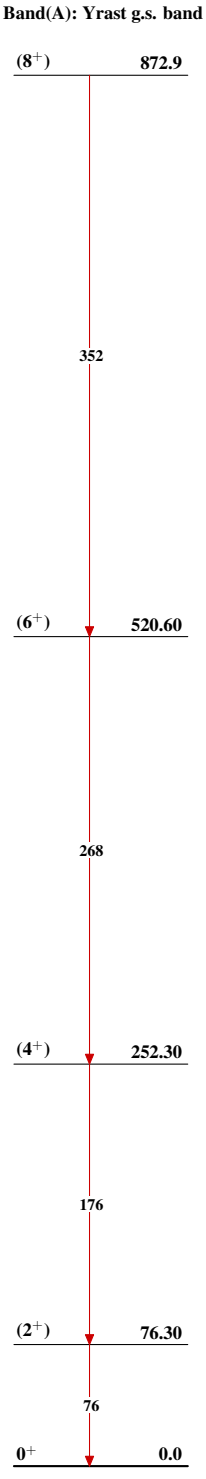
Level Scheme

Intensities: Relative photon branching from each level



$^{154}_{58}Ce_{96}$

Adopted Levels, Gammas



$^{154}_{58}Ce_{96}$