^{248}Cm SF decay 2007Ur03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 185, 2 (2022)	23-Aug-2022

Parent: ^{248}Cm: E=0; $J^\pi=0^+$; $T_{1/2}=3.48\times10^5$ y *6*; %SF decay=8.39 *16*

^{248}Cm-$T_{1/2}$: From ^{248}Cm Adopted Levels in the ENSDF database (Sept 2014 update).

^{248}Cm-%SF decay: %SF=8.39 *16* for ^{248}Cm decay.

2007Ur03: measured Eγ, $\gamma\gamma$ coin using EUROGAM2 and four low-energy photon detectors. Deduced levels, J^π, band structure. Additional information 1.

^{149}La Levels

E(level)†	J^π‡	Comments
0	(3/2)	J^π: 3/2 is considered as favored by 2007Ur03. Other possible spin of 5/2 is not completely ruled out but less probable.
0+x#	(7/2$^-$)	Additional information 2. E(level): x<35 keV if 3/2 for g.s. and <20 keV if 5/2 for g.s., estimated by 2007Ur03 from non-observation of a γ ray of this energy or enhanced intensity of x rays.
81.5+x# *3*	(11/2$^-$)	
280.8+x# *5*	(15/2$^-$)	
598.3+x# *6*	(19/2$^-$)	
1016.5+x# *6*	(23/2$^-$)	
1510.3+x# *7*	(27/2$^-$)	
2051.1+x# *8*	(31/2$^-$)	
2606.7+x# *8*	(35/2$^-$)	

† From a least-squares fit to Eγ values, assuming an uncertainty of 0.3 keV for each γ ray.

‡ As assigned by 2007Ur03, based on band structure and $\gamma\gamma(\theta)$ data.

Band(A): Probable π3/2[541],α=−1/2.

$\gamma(^{149}La)$

Eγ	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.†	α‡	Comments
81.5	81.5+x	(11/2$^-$)	0+x	(7/2$^-$)	(E2)	4.15 *6*	α(exp)=6 *1*; α(K)exp=3.5 *6* Mult.: from α(exp) and α(K)exp.
199.3	280.8+x	(15/2$^-$)	81.5+x	(11/2$^-$)	(Q)		(199.2γ)(81.5γ)(θ): A_2=+0.07 *1*, A_4=−0.04 *2*.
317.5	598.3+x	(19/2$^-$)	280.8+x	(15/2$^-$)	(Q)		(199.3γ)(317.5γ)(θ): A_2=+0.11 *2*, A_4=−0.03 *2*.
418.2	1016.5+x	(23/2$^-$)	598.3+x	(19/2$^-$)	(Q)		(317.5γ)(418.2γ)(θ): A_2=+0.09 *2*, A_4=+0.02 *3*.
493.8	1510.3+x	(27/2$^-$)	1016.5+x	(23/2$^-$)	(Q)		(199.3γ+317.5γ)(493.8γ)(θ): A_2=+0.07 *2*, A_4=+0.04 *5*.
540.8	2051.1+x	(31/2$^-$)	1510.3+x	(27/2$^-$)	(Q)		(199.3γ+317.5γ+418.3γ)(540.1γ)(θ): A_2=+0.12 *4*, A_4=+0.01 *6*.
555.6	2606.7+x	(35/2$^-$)	2051.1+x	(31/2$^-$)			

† From $\gamma\gamma(\theta)$ data in 2007Ur03. Mult=(Q) is for ΔJ=2, quadrupole (most likely E2) transition, unless otherwise stated. 2007Ur03 assigned (E2).

‡ Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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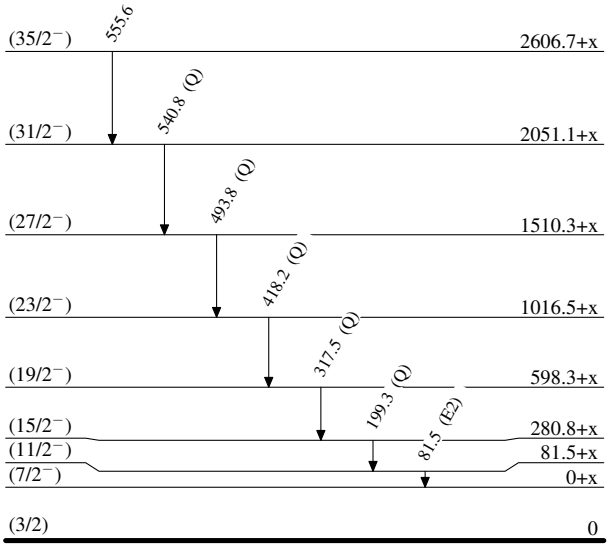
Level Scheme



$^{149}_{57}La_{92}$

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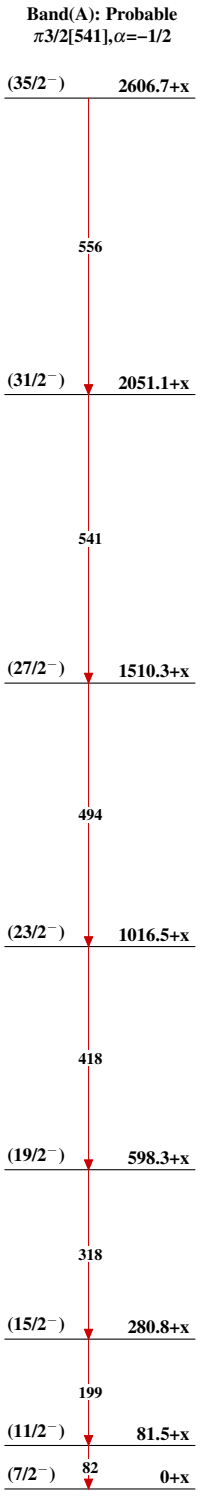

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