^{248}Cm SF decay 2000Ur06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	P. K. Joshi, B. Singh, S. Singh, A. K. Jain	NDS 138, 1 (2016)	15-Oct-2016

Parent: ^{248}Cm: E=0.0; $J^\pi=0^+$; $T_{1/2}=3.48\times10^5$ y *6*; %SF decay=0.0038 *21*

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

^{248}Cm-%SF decay: From 0.046 *29* per 100 fissions (1994EnZZ) and %SF=8.39 *16* (^{248}Cm Adopted Levels in the ENSDF database, Sept 2014 update).

2000Ur06: measured Eγ, Iγ, γγ-coin using EUROGAM2 array of Compton-suppressed Ge detectors. Identification of ^{139}Te γ rays made by gating on known transitions in complementary Ru isotopes. Mass identification made using the technique of mass correlation proposed by 1991Ho16: <A(Ru)>=106.3 *2* resulting in <A(Te)>=138.8 *2*. The ordering of the gammas in the level scheme was established on the basis of the measured Iγ values. Consult 2000Ur06 for additional discussions on the systematics of N=87 isotones.

^{139}Te Levels

E(level)	J^π[†]	Comments
0.0	(7/2⁻)	J^π: from the systematic trend of yrast excitations in N=87 isotones. Alternate assignment of 5/2⁻ less likely since the 271 level fits the systematics for the 9/2⁻ levels in N=87 isotones and the 271γ has a stretched dipole character. Configuration=$\nu 2f^3_{7/2}\otimes\nu i^2_{13/2}$ $_{0+}$.
271.0	(9/2⁻)	Configuration=$\nu 2f^2_{7/2}$ $_{0+}\otimes\nu i^2_{13/2}$ $_{0+}\otimes\nu 1h_{9/2}$.
627.5[‡]	(13/2⁻)	
1063.9[‡]	(17/2⁻)	
1598.7[‡]	(21/2⁻)	
2210.5[‡]		

[†] From γγ(θ) data, assuming J^π(g.s.)=(7/2⁻) and Δπ=no for stretched dipole and quadrupole transitions.

[‡] Band(A): Band built on (13/2⁻). Configuration=$\nu 1h_{9/2}\otimes$(first 2^+ in ^{138}Te).

γ(^{139}Te)

E_γ	E_i(level)	J^π_i	E_f	J^π_f	Mult.	Comments
271.0	271.0	(9/2⁻)	0.0	(7/2⁻)	D	Mult.: see comment for 356.5γ.
356.5	627.5	(13/2⁻)	271.0	(9/2⁻)	Q	Mult.: (356.5+534.8γ+436.4γ)(271γ)(θ): A_2=−0.08 *3*, A_4=−0.04 *4* consistent with stretched quadrupole − stretched dipole cascade. Mult.: see comment for 436.4γ.
436.4	1063.9	(17/2⁻)	627.5	(13/2⁻)	Q	Mult.: (436.4γ)(356.5γ)(θ): A_2=+0.11 *5*, A_4=−0.05 *5* consistent with stretched quadrupole − stretched quadrupole cascade.
534.8	1598.7	(21/2⁻)	1063.9	(17/2⁻)	Q	Mult.: (534.8γ+436.4γ)(356γ)(θ): A_2=+0.12 *4*, A_4=−0.04 *4* consistent with stretched quadrupole − stretched quadrupole cascade.
611.8	2210.5		1598.7	(21/2⁻)		

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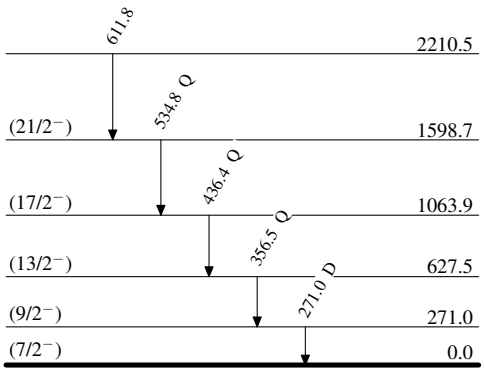
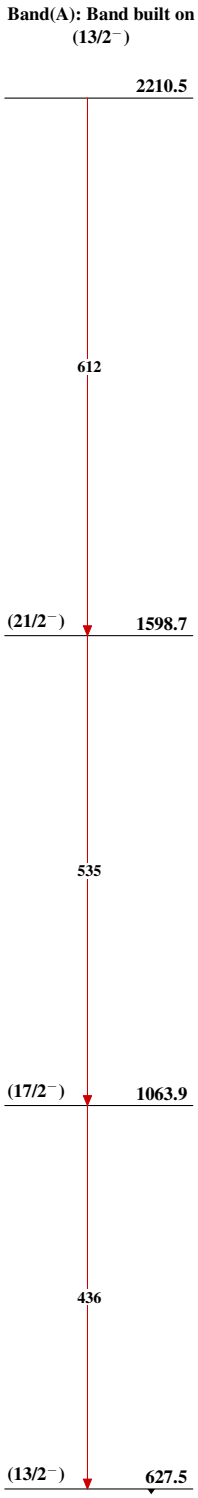
Level Scheme



$^{139}_{52}Te_{87}$

^{248}Cm SF decay 2000Ur06



$^{139}_{52}Te_{87}$