^{248}Cm(n,γ)E=th:primary γ's 1982Ho07

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 195,718 (2024)	12-Oct-2023

1982Ho07 (earlier reports by the same authors 1978HoZG, 1981HoZW): The thermal neutron capture on 96.6% high purity ^{248}Cm was performed at the high flux reactor of the Institut Laue-Langevin at Grenoble. Primary gammas were measured with Ge(Li) pair-spectrometer (FWHM=4.3 keV at Eγ=6.6 MeV) which was surrounded by two NaI(Tl) for detection of the 511 keV annihilation peak. Gammas from ^{27}Al(n,γ) reaction produced from the aluminum container housing the target and the 4945-keV carbon in the target assembly structural material were used to calibrate the spectrometer. Measured Eγ and Iγ.

^{249}Cm Levels

E(level)[†]	J$^\pi$[‡]	Comments
0	1/2$^+$	
208.3 *3*	3/2$^+$	
306.8 *4*		
469.8 *3*	3/2$^-$	
494.3 *3*	(1/2$^-$,3/2$^-$)	
690.4 *4*		
858.9 *8*	(1/2,3/2)	
917.2 *3*	(1/2$^-$)	
962.6 *3*	(3/2$^-$)	
1011.2 *4*	(1/2,3/2)	
1049.8 *3*	(1/2,3/2)	
1152.7 *10*	(1/2,3/2)	
1175.0 *3*	(1/2,3/2)	
1203.6 *3*	(1/2,3/2)	
1263.3 *6*	(1/2,3/2)	
1268.4 *6*	(1/2,3/2)	
1314.3 *4*	(1/2,3/2)	
(4713.37 *25*)	1/2$^+$	Additional information 1. E(level): Neutron capture state. E=S(n)=4713.37 keV *25* (2021Wa16).

[†] The energies are from population of the primary transitions from the capture state in 1982Ho07. The level energies listed here have been deduced by the evaluator using S(n)=4713.37 *25* (2021Wa16) and Eγ with the recoil corrections applied as provided by the authors (1982Ho07).

[‡] From Adopted Levels.

γ(^{249}Cm)

E$_\gamma$[†]	I$_\gamma$[‡]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
3399.0 *4*	10.5 *11*	(4713.37)	1/2$^+$	1314.3	(1/2,3/2)	
3444.9 *6*	73 *3*	(4713.37)	1/2$^+$	1268.4	(1/2,3/2)	
3450.1[#] *5*	6.7 *13*	(4713.37)	1/2$^+$	1263.3	(1/2,3/2)	
3509.7 *3*	37.9 *19*	(4713.37)	1/2$^+$	1203.6	(1/2,3/2)	
3538.3 *3*	100.0 *4*	(4713.37)	1/2$^+$	1175.0	(1/2,3/2)	
3560.6 *10*	36 *5*	(4713.37)	1/2$^+$	1152.7	(1/2,3/2)	Eγ: Interference from ^{27}Al(n,γ).
3663.5 *3*	29.5 *18*	(4713.37)	1/2$^+$	1049.8	(1/2,3/2)	
3702.1 *4*	9.2 *8*	(4713.37)	1/2$^+$	1011.2	(1/2,3/2)	
3750.7 *3*	62 *3*	(4713.37)	1/2$^+$	962.6	(3/2$^-$)	
3796.1 *3*	21.2 *12*	(4713.37)	1/2$^+$	917.2	(1/2$^-$)	
3854.5[#] *8*	5.5 *21*	(4713.37)	1/2$^+$	858.9	(1/2,3/2)	
4022.9 *4*	12.9 *12*	(4713.37)	1/2$^+$	690.4		Eγ: Complex line.

Continued on next page (footnotes at end of table)

^{248}Cm(n,γ)E=th:primary γ′s 1982Ho07 (continued)

γ(^{249}Cm) (continued)

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π
4219.0 *3*	57.1 *24*	(4713.37)	$1/2^+$	494.3	$(1/2^-,3/2^-)$
4243.5 *3*	35.2 *16*	(4713.37)	$1/2^+$	469.8	$3/2^-$
4406.5 *4*	7.5 *7*	(4713.37)	$1/2^+$	306.8	
4505.0 *3*	12.4 *8*	(4713.37)	$1/2^+$	208.3	$3/2^+$
4713.4 *4*	8.6 *7*	(4713.37)	$1/2^+$	0	$1/2^+$

[†] From 1982Ho07. Eγ reported by 1982Ho07 were recoil corrected. Recoil energies have been substracted by the evaluator and listed in this dataset.
[‡] From 1982Ho07.
[#] Placement of transition in the level scheme is uncertain.

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Level Scheme

Intensities: Relative I_γ

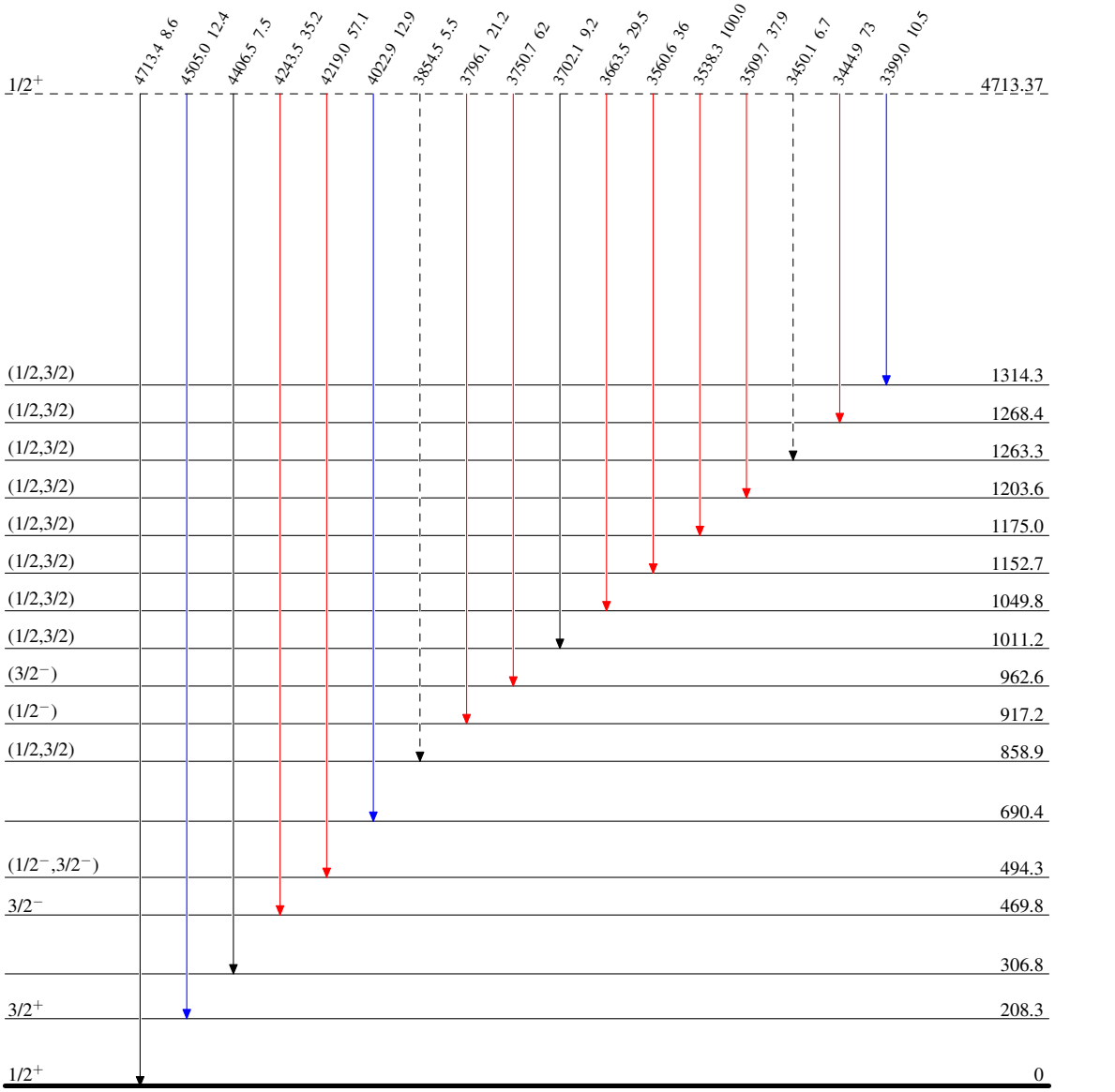
Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

γ Decay (Uncertain)



$^{249}_{96}Cm_{153}$