

$^{149}\text{Sm}(n,\gamma)$:high resolution **2006Bo10**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, A. A. Sonzogni		NDS 114, 435 (2013)	1-Apr-2013

2006Bo10: E=Thermal, Measured $E\gamma$, $I\gamma$, $\gamma\gamma$, lifetimes using gamma ray induced Doppler (GRID) broadening technique. Gamma rays detected with GAMS4 flat crystal spectrometer. IBA model calculations. The gamma energies from this work are not used in the Adopted Levels because the uncertainties only include systematic errors.

 ^{150}Sm Levels

E(level) [†]	J^π	$T_{1/2}$	Comments
0.0	0 ⁺		
333.9522 7	2 ⁺		
740.4672 9	0 ⁺		
773.3744 9	4 ⁺		
1046.1488 9	2 ⁺	1.4 ps 5	$T_{1/2}$: range: 0.85 to 1.91 ps: 712 γ .
1071.3988 10	3 ⁻	0.28 ps 7	$T_{1/2}$: range: 0.207 to 0.348 ps: 737 γ .
1165.7805 10	1 ⁻	0.12 ps 8	$T_{1/2}$: range: 0.040 to 0.200 ps: 832 γ and 1166 γ .
1193.8439 9	2 ⁺	0.62 ps 18	$T_{1/2}$: range: 0.43 to 0.80 ps: 1194 γ .
1255.5024 19	0 ⁺		
1278.9025 14	6 ⁺	2.4 ps 7	$T_{1/2}$: range: 1.7 to 3.1 ps: 506 γ .
1357.6652 10	5 ⁻		
1417.3442 9	2 ⁺		
1449.1814 9	4 ⁺	1.8 ps 8	$T_{1/2}$: range: 1.0 to 2.5 ps: 676 γ .
1504.5671 9	3 ⁺		
1642.6499 10	4 ⁺	0.54 ps 25	$T_{1/2}$: range: 0.30 to 0.79 ps: 869 γ .
1673.1821 20	(4 ⁺)		
1819.4420 9	4 ⁺		
1821.9296 11	4 ⁺		
1837.0166 17	8 ⁺	1.3 ps 7	$T_{1/2}$: range: 0.54 to 2.0 ps: if 558 γ is correctly placed.

[†] From least-squares fit to $E\gamma$'s; $\chi^2=2.7$, larger than critical value of 1.0.

 $\gamma(^{150}\text{Sm})$

ΔE : The uncertainties are systematic only.

$E_i(\text{level})$	J_i^π	E_γ	E_f	J_f^π	$E_i(\text{level})$	J_i^π	E_γ	E_f	J_f^π
333.9522	2 ⁺	333.9514 8	0.0	0 ⁺	1255.5024	0 ⁺	209.36 [‡] 2	1046.1488	2 ⁺
740.4672	0 ⁺	406.5156 8	333.9522	2 ⁺			921.5471 18	333.9522	2 ⁺
773.3744	4 ⁺	439.4227 9	333.9522	2 ⁺	1278.9025	6 ⁺	505.5269 10	773.3744	4 ⁺
1046.1488	2 ⁺	305.6813 6	740.4672	0 ⁺	1357.6652	5 ⁻	78.76 [‡] 1	1278.9025	6 ⁺
		712.1918 14	333.9522	2 ⁺			286.293 [‡] 15	1071.3988	3 ⁻
		1046.1459 21	0.0	0 ⁺			584.2902 11	773.3744	4 ⁺
1071.3988	3 ⁻	298.061 [‡] 14	773.3744	4 ⁺	1417.3442	2 ⁺	161.84 [‡] # 3	1255.5024	0 ⁺
		737.4420 15	333.9522	2 ⁺			223.5012 4	1193.8439	2 ⁺
1165.7805	1 ⁻	831.8235 17	333.9522	2 ⁺			251.5632 5	1165.7805	1 ⁻
		1165.74 3	0.0	0 ⁺			345.9434 7	1071.3988	3 ⁻
1193.8439	2 ⁺	147.73 [‡] 4	1046.1488	2 ⁺			1083.415 [#] 20	333.9522	2 ⁺
		420.48 [‡] 9	773.3744	4 ⁺			1417 [‡]	0.0	0 ⁺
		453.3772 9	740.4672	0 ⁺	1449.1814	4 ⁺	91.8 [‡] # 4	1357.6652	5 ⁻
		859.8846 17	333.9522	2 ⁺			170.23 [‡] # 2	1278.9025	6 ⁺
		1193.8412 24	0.0	0 ⁺			255.3362 5	1193.8439	2 ⁺

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$^{149}\text{Sm}(n,\gamma)$:high resolution 2006Bo10 (continued) $\gamma(^{150}\text{Sm})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	E_f	J_f^π	Comments
1449.1814	4 ⁺	377.73 [‡] 3	1071.3988	3 ⁻	
		403.0316 8	1046.1488	2 ⁺	
		675.8057 14	773.3744	4 ⁺	
1504.5671	3 ⁺	310.7233 6	1193.8439	2 ⁺	
		458.4167 9	1046.1488	2 ⁺	
		731.1909 15	773.3744	4 ⁺	
		1170.6108 23	333.9522	2 ⁺	
1642.6499	4 ⁺	138.05 [‡] # 4	1504.5671	3 ⁺	
		193.46 [‡] 2	1449.1814	4 ⁺	
		225.34 [‡] 2	1417.3442	2 ⁺	
		284.9843 6	1357.6652	5 ⁻	
		448.8037 9	1193.8439	2 ⁺	
		571.2512 10	1071.3988	3 ⁻	
		596.53 [‡] 4	1046.1488	2 ⁺	
		869.2747 17	773.3744	4 ⁺	
		1308.692 3	333.9522	2 ⁺	
1673.1821	(4 ⁺)	626.67 [‡] 22	1046.1488	2 ⁺	
		899.8049# 18	773.3744	4 ⁺	
1819.4420	4 ⁺	315.0 [‡] 2	1504.5671	3 ⁺	
		370.2575 7	1449.1814	4 ⁺	E_γ : Poor fit. Level energy difference=370.2600.
		402.0986 8	1417.3442	2 ⁺	
		461.7766 9	1357.6652	5 ⁻	
		540.55 [‡] 6	1278.9025	6 ⁺	
		625.568 [‡] 20	1193.8439	2 ⁺	
		748.0430 15	1071.3988	3 ⁻	
		773.2921 15	1046.1488	2 ⁺	
		1485.492 3	333.9522	2 ⁺	E_γ : Poor fit. Level energy difference=1485.482.
1821.9296	4 ⁺	179.26 [‡] 5	1642.6499	4 ⁺	
		372.7475 8	1449.1814	4 ⁺	
		464.2638 9	1357.6652	5 ⁻	
		542.972 [‡] 25	1278.9025	6 ⁺	
1837.0166	8 ⁺	558.1131# 10	1278.9025	6 ⁺	

[†] The uncertainties are systematic only.

[‡] E_γ taken by 2006Bo10 from ENSDF for ^{150}Sm .

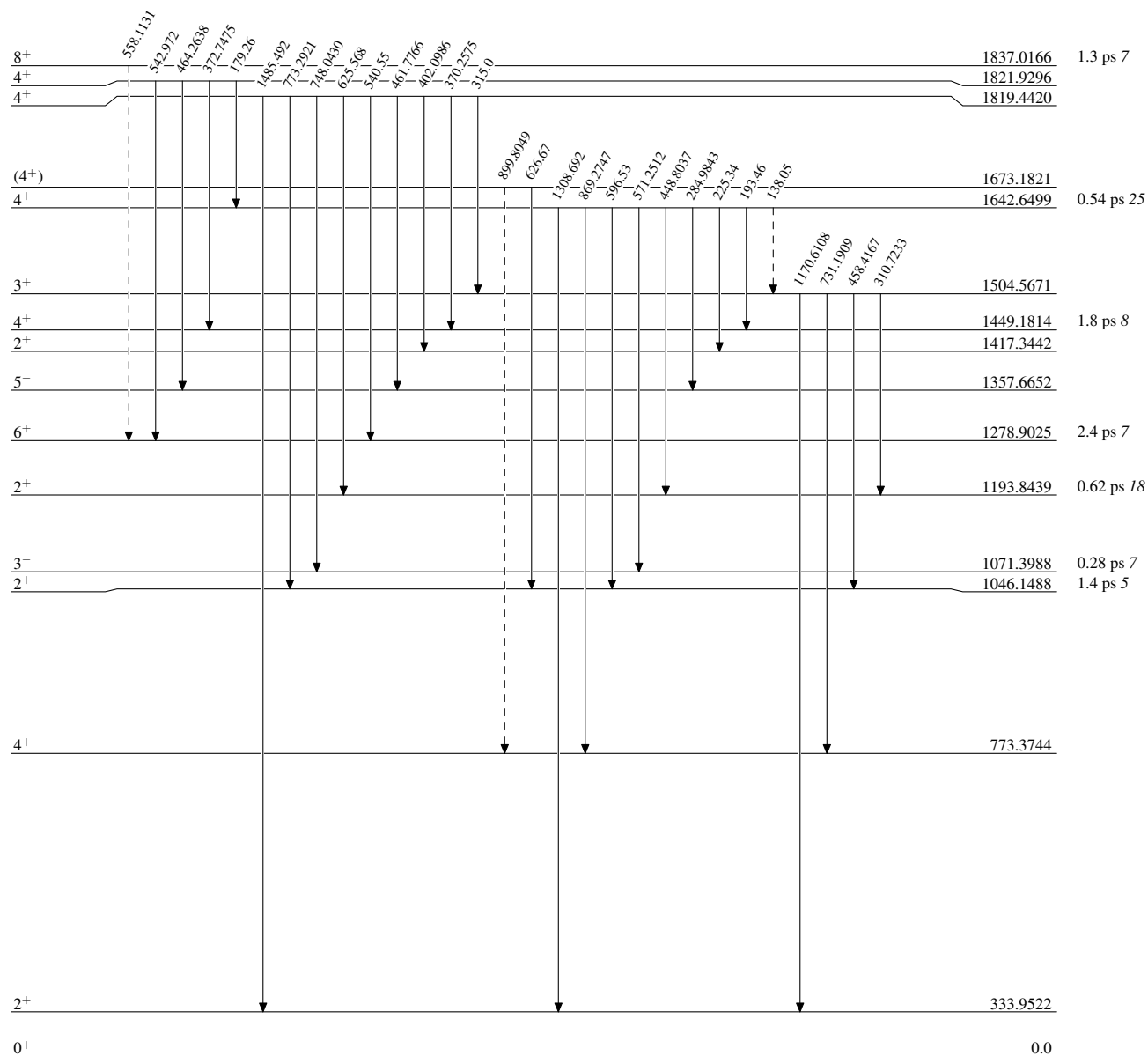
Placement of transition in the level scheme is uncertain.

^x γ ray not placed in level scheme.

$^{149}\text{Sm}(n,\gamma)$:high resolution 2006Bo10

Legend

Level Scheme

-----► γ Decay (Uncertain) $^{150}_{62}\text{Sm}_{88}$

$^{149}\text{Sm}(n,\gamma)$:high resolution 2006Bo10

Legend

Level Scheme (continued)

-----► γ Decay (Uncertain)