^{144}Nd(n,γ) E=thermal 1975Hi03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 110, 507 (2009)	1-Oct-2008

Measured: γ (1975Hi03,1975NaZE), $\gamma\gamma$ (1975Hi03).

^{145}Nd Levels

E(level)	J$^\pi$†	E(level)	J$^\pi$†	E(level)	J$^\pi$†	E(level)	J$^\pi$†
0.0	$7/2^-$	1213.7 *3*	$(1/2)^-$	1714.0 *4*	$1/2^+$	2270.4	$3/2^-$
67.1 *2*	$3/2^-$	1249.7 *2*	$5/2^-$	1744.8 *8*	$3/2^-$	2626.2 *10*	1/2,3/2
72.2 *2*	$5/2^-$	1285.3 *3*	$5/2^-$	1884.5 *10*	$3/2^-$	2703	$3/2^-$
780.4 *2*	$3/2^-$	1316.8 *3*	$(3/2)^-$	2004.0 *12*	$3/2^-$	3220	$1/2^-$,$3/2^-$
920.2 *3*	$1/2^-$	1403.8 *3*	$(5/2^-)$	2035.7 *6*	$3/2^-$	(5756 *2*)	$1/2^+$‡
1050.9 *8*	$7/2^-$,$5/2^-$	1592.6 *6*	$(1/2)^-$	2107.2	$3/2^-$		

† Adopted values, except where noted otherwise.
‡ Capture of the thermal neutron with L=0.

γ(^{145}Nd)

E$_\gamma$#	I$_\gamma$†@	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
x60.4 *8*					
67.1 *2*		67.1	$3/2^-$	0.0	$7/2^-$
72.2		72.2	$5/2^-$	0.0	$7/2^-$
140.2 *2*	1.9 *5*	920.2	$1/2^-$	780.4	$3/2^-$
x302.3 *3*	0.4 *1*				
x310.4 *2*	0.7 *2*				
352.7 *2*	2.4 *5*	1403.8	$(5/2^-)$	1050.9	$7/2^-$,$5/2^-$
x380.8 *2*	1.1 *2*				
x413.4 *3*	1.0 *2*				
x426.9 *2*	0.3 *1*				
x544.6 *17*	0.3 *1*				
x546.9 *7*	0.5 *1*				
x552.9 *2*	2.8 *6*				
x556.4 *3*	0.6 *1*				
x564.0 *2*	2.1 *4*				
x584.1 *3*	1.1 *2*				
623.6 *2*	0.8 *2*	1403.8	$(5/2^-)$	780.4	$3/2^-$
x628.9 *2*	0.7 *2*				
x645.3 *2*	0.6 *1*				
x650.0 *2*	0.5 *1*				
x659.0 *2*	1.2 *2*				
x667.9 *6*	0.3 *1*				
x673.1 *3*	0.8 *2*				
x676.5 *6*	0.4 *1*				
x681.6 *7*	0.6 *1*				
x684.2 *14*	0.7 *2*				
708.2 *2*	26.2 *26*	780.4	$3/2^-$	72.2	$5/2^-$
713.4 *2*	18.3 *18*	780.4	$3/2^-$	67.1	$3/2^-$
x724.5 *6*	0.7 *2*				
x737.8 *7*	1.5 *3*				
x749.1 *5*	0.7 *2*				
x773.0 *13*	0.3 *1*				
780.5 *2*	9.0 *9*	780.4	$3/2^-$	0.0	$7/2^-$

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^{144}Nd(n,γ) E=thermal 1975Hi03 (continued)

$\gamma(^{145}Nd)$ (continued)

E_γ[#]	I_γ[†@]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]789.8 *13*	0.3 *1*					
794.1 *2*	3.6 *7*	1714.0	1/2$^+$	920.2	1/2$^-$	
[x]811.9 *2*	5.9 *6*					
852.8[‡] *2*	100[‡] *10*	920.2	1/2$^-$	67.1	3/2$^-$	
[x]876.8 *2*	0.8 *2*					
[x]883.4 *4*	0.5 *1*					
[x]889.8 *9*	0.4 *1*					
[x]906.8 *2*	1.2 *2*					
[x]920.7 *4*	0.6 *1*					
[x]924.2 *3*	1.0 *2*					
933.4 *2*	2.8 *6*	1714.0	1/2$^+$	780.4	3/2$^-$	
[x]937.0 *2*	6.7 *7*					
[x]946.4 *2*	1.0 *2*					
964.4[&] *3*	1.1[&] *2*	1744.8	3/2$^-$	780.4	3/2$^-$	
964.4[&a] *3*	1.1[&] *2*	1884.5	3/2$^-$	920.2	1/2$^-$	
[x]968.1 *4*	0.7 *2*					
[x]1029.8 *15*	0.7 *2*					
[x]1033.0 *9*	0.9 *2*					
[x]1042.4 *4*	0.6 *1*					
[x]1046.7 *4*	0.7 *2*					
1050.9 *8*	1.4 *3*	1050.9	7/2$^-$,5/2$^-$	0.0	7/2$^-$	
[x]1052.5 *7*	0.8 *2*					
1056.9 *8*	0.5 *1*	2270.4	3/2$^-$	1213.7	(1/2)$^-$	
[x]1088.5 *2*	2.0 *4*					
[x]1097.9 *9*	1.0 *2*					
[x]1101.1 *6*	1.1 *2*					
[x]1105.9 *7*	0.5 *1*					
[x]1141.6 *6*	1.5					
1146.6 *2*	17.5 *18*	1213.7	(1/2)$^-$	67.1	3/2$^-$	
[x]1161.1 *2*	4.4 *9*					
[x]1165.0 *4*	0.7 *2*					
1177.0 *3*	0.7 *2*	1249.7	5/2$^-$	72.2	5/2$^-$	
1181.5 *3*	0.8 *2*	1249.7	5/2$^-$	67.1	3/2$^-$	
[x]1204.4 *3*	1.6 *3*					
1213.0 *2*	2.6 *5*	1285.3	5/2$^-$	72.2	5/2$^-$	
1218.3 *2*	2.1 *4*	1285.3	5/2$^-$	67.1	3/2$^-$	
1244.5 *2*	4.8 *5*	1316.8	(3/2)$^-$	72.2	5/2$^-$	
1249.7 *2*	<4.9	1249.7	5/2$^-$	0.0	7/2$^-$	
1249.7 *2*	4.9 *5*	1316.8	(3/2)$^-$	67.1	3/2$^-$	
[x]1265.9 *2*	2.2 *4*					
[x]1268.1 *3*	1.3 *3*					
[x]1271.5 *2*	4.2 *8*					
1285.0 *5*	1.3 *3*	1285.3	5/2$^-$	0.0	7/2$^-$	
[x]1292.7 *2*	1.0 *2*					
[x]1304.6 *3*	1.3 *3*					
[x]1314.7 *2*	1.0 *2*					
[x]1323.7 *2*	1.9 *4*					
1331.5 *2*	<1.5	1403.8	(5/2$^-$)	72.2	5/2$^-$	I_γ: from analysis of branching in (n,γ), (n,n$'\gamma$) and β^- decay follow that part of Iγ(1331.5γ) is located elsewhere in the decay scheme.
[x]1333.7 *4*	0.8 *2*					
1337.4 *4*	0.7 *2*	1403.8	(5/2$^-$)	67.1	3/2$^-$	
[x]1346.2 *4*	0.4 *1*					
1350.4 *2*	1.1 *2*	2270.4	3/2$^-$	920.2	1/2$^-$	
[x]1356.9 *2*	1.7 *3*					
[x]1366.5 *9*	0.7 *2*					

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^{144}Nd(n,γ) E=thermal 1975Hi03 (continued)

γ(^{145}Nd) (continued)

E_γ[#]	I_γ[†@]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]1376.1 2	4.4 5					
[x]1378.2 4	1.1 2					
[x]1386.4 4	0.5 1					
[x]1389.6 3	0.8 2					
[x]1395.6 5	0.6 1					
[x]1402.5 15	1.4 3					
[x]1408.9 15	1.7 3					
[x]1450.3 6	3.2 6					
[x]1471.7 8	1.9 4					
1489.9[&] 6	2.7[&] 5	2270.4	3/2$^-$	780.4	3/2$^-$	
1489.9[&] 6	2.7[&] 6	2703	3/2$^-$	1213.7	(1/2)$^-$	
[x]1506.6 8	6.1 6					
1506.6 8	6.1 6	3220	1/2$^-$,3/2$^-$	1714.0	1/2$^+$	
[x]1512.3 19	3.4 7					
[x]1520.5 19	2.0 4					
1525.5 6	11.3 11	1592.6	(1/2)$^-$	67.1	3/2$^-$	
[x]1556.2 11	1.3 3					
[x]1594.1	0.6 3					
[x]1613.6 5	1.4 3					
1646.8 19	2.6 5	1714.0	1/2$^+$	67.1	3/2$^-$	
[x]1660.9 19	2.5 5					
1671.8 20	19 2	1744.8	3/2$^-$	72.2	5/2$^-$	E_γ,I_γ: data of 1975Hi03 reevaluated by 1977Mc09, see also 1975NaZE.
1677.4 7	10.6 11	1744.8	3/2$^-$	67.1	3/2$^-$	
[x]1688.7 19	2.5 5					
1706.6 13	2.9 6	2626.2	1/2,3/2	920.2	1/2$^-$	
[x]1739.5 22	1.6 3					
1743.6[‡]	2.6[‡]	1744.8	3/2$^-$	0.0	7/2$^-$	
[x]1759.9 16	2.8 6					
1812.3 9	3.4 7	1884.5	3/2$^-$	72.2	5/2$^-$	
1816.9 18	2.0 4	1884.5	3/2$^-$	67.1	3/2$^-$	
[x]1821.6 12	2.0 4					
[x]1832.8 9	1.7 3					
1845.9 6	2.8 6	2626.2	1/2,3/2	780.4	3/2$^-$	
1884.6[‡]	1.1[‡]	1884.5	3/2$^-$	0.0	7/2$^-$	
[x]1895.7 6	3.3 7					
1936.9 11	1.8 4	2004.0	3/2$^-$	67.1	3/2$^-$	
1968.6 5	4.7 5	2035.7	3/2$^-$	67.1	3/2$^-$	
2007.4[‡]	1.5[‡]	3220	1/2$^-$,3/2$^-$	1213.7	(1/2)$^-$	
2035.2[‡]	1.3[‡]	2035.7	3/2$^-$	0.0	7/2$^-$	
2040.2[‡]	0.6[‡]	2107.2	3/2$^-$	67.1	3/2$^-$	
2107.2[‡]	0.3[‡]	2107.2	3/2$^-$	0.0	7/2$^-$	
2204.1[‡]	11.0[‡]	2270.4	3/2$^-$	67.1	3/2$^-$	
2271.3[‡]	1.6[‡]	2270.4	3/2$^-$	0.0	7/2$^-$	
2440.6	1.2	3220	1/2$^-$,3/2$^-$	780.4	3/2$^-$	
2535[‡]	5.1[‡]	(5756)	1/2$^+$	3220	1/2$^-$,3/2$^-$	
2558.4[‡]	1.4[‡]	2626.2	1/2,3/2	67.1	3/2$^-$	
2635.8[‡]	3.5[‡]	2703	3/2$^-$	67.1	3/2$^-$	
2703.7[‡]	1.2[‡]	2703	3/2$^-$	0.0	7/2$^-$	
3051[‡]	6.2[‡]	(5756)	1/2$^+$	2703	3/2$^-$	
3129[‡]	6.6[‡]	(5756)	1/2$^+$	2626.2	1/2,3/2	
3486[‡]	1.5[‡]	(5756)	1/2$^+$	2270.4	3/2$^-$	

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^{144}Nd(n,γ) E=thermal 1975Hi03 (continued)

γ(^{145}Nd) (continued)

E_γ[#]	I_γ[†@]	E_i(level)	J_i^π	E_f	J_f^π	Comments
3650[‡]	0.7[‡]	(5756)	$1/2^+$	2107.2	$3/2^-$	
3719[‡]	3.5[‡]	(5756)	$1/2^+$	2035.7	$3/2^-$	
3872[‡]	3.0[‡]	(5756)	$1/2^+$	1884.5	$3/2^-$	
4011	26.1	(5756)	$1/2^+$	1744.8	$3/2^-$	E_γ: from 1975NaZE.
4042[‡]	7.2[‡]	(5756)	$1/2^+$	1714.0	$1/2^+$	
4163.3 *20*	15.0 *15*	(5756)	$1/2^+$	1592.6	$(1/2)^-$	
4542.0 *20*	11.0 *11*	(5756)	$1/2^+$	1213.7	$(1/2)^-$	
4836.9 *20*	97.0 *97*	(5756)	$1/2^+$	920.2	$1/2^-$	
4975.8 *20*	13.0 *13*	(5756)	$1/2^+$	780.4	$3/2^-$	
5687.5 *20*	1.2 *3*	(5756)	$1/2^+$	67.1	$3/2^-$	

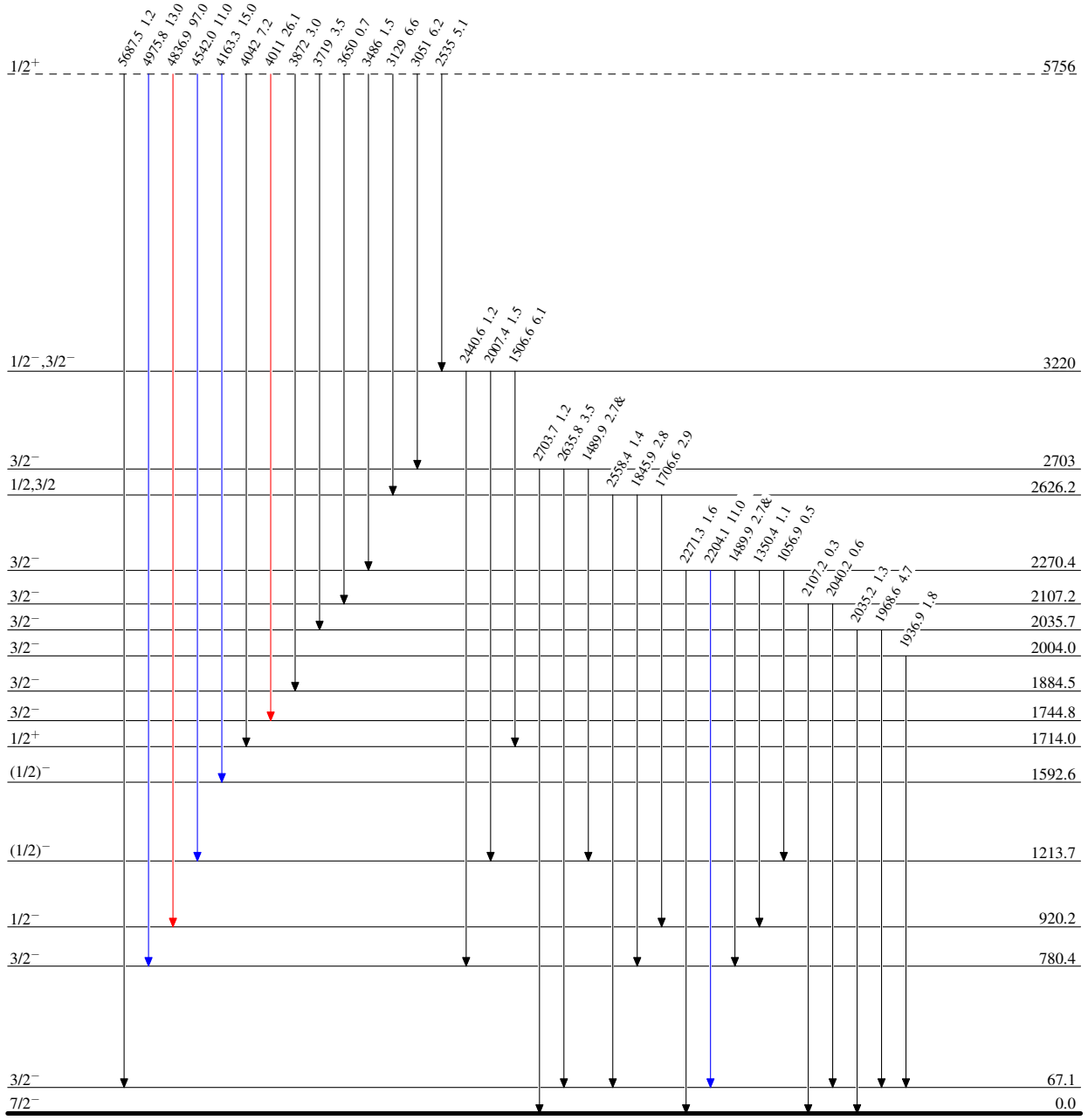
† Relative Iγ.
‡ From 1975NaZE.
# 334.1γ, 439.6γ and 506.3γ from 1975Hi03 probably belong to ^{150}Sm.
@ Intensity per 100 neutron captures.
& Multiply placed with undivided intensity.
a Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

^{144}Nd(n,γ) E=thermal 1975Hi03

Level Scheme

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



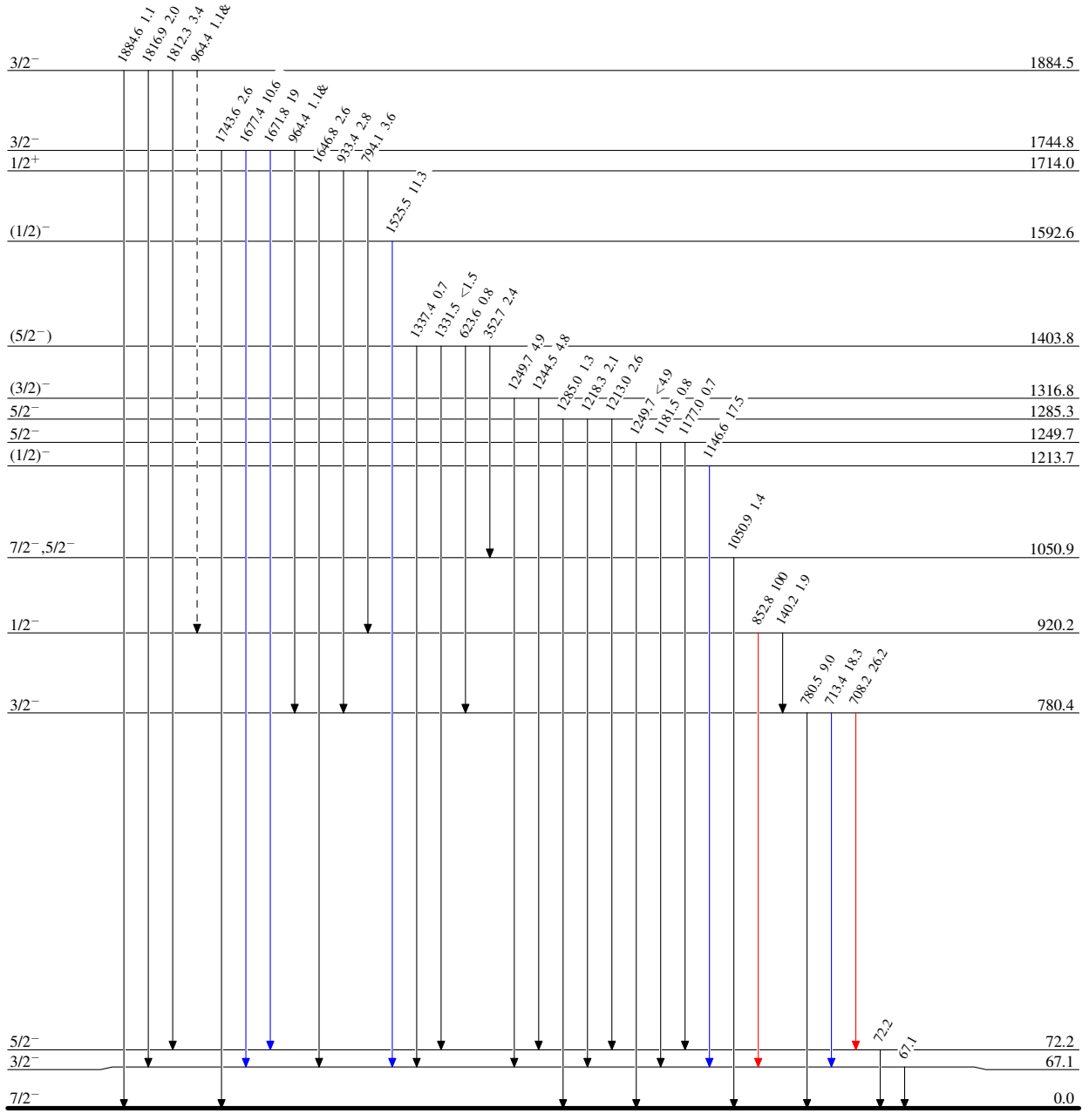
$^{145}_{60}Nd_{85}$

^{144}Nd(n,γ) E=thermal 1975Hi03

Level Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given

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)



$^{145}_{60}Nd_{85}$