^{150}Nd(d,pγ) 1984Ka12

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 110, 1 (2009)	20-Nov-2008

E=10 MeV.

Metallic ^{150}Nd targets (95% enriched) used to make $\gamma\gamma$, and $\gamma\gamma$(t) coincidence measurements. Sample coincidence spectra are presented. The energies of the observed γ's are indicated on a level scheme without Iγ's.

^{151}Nd Levels

E(level)	J$^\pi$[†]	T$_{1/2}$	E(level)	J$^\pi$[†]
0.0	3/2$^+$		443.5 *3*	(9/2)$^-$
22.5 *1*	(5/2)$^+$		495.2 *2*	(1/2)$^-$
57.7 *1*	(3/2)$^-$		506.9 *2*	(3/2)$^-$
75.9 *1*	(7/2)$^+$		531.6[@] *2*	(5/2$^-$,7/2$^-$)
105.8 *1*	5/2$^-$		542.8[#] *2*	(1/2 to 7/2)$^+$
177.8 *1*	(7/2$^-$)		599.2 *2*	(5/2)$^+$
189.0 *1*	(3/2)$^-$	<0.7[‡] ns	846.6 *2*	1/2$^-$,3/2$^-$
249.5 *1*	(5/2)$^-$		892.9 *2*	1/2$^-$,3/2$^-$
335.6 *2*	(7/2)$^-$		949.1 *2*	(1/2$^-$,3/2,5/2$^+$)

[†] From 'Adopted Levels'.

[‡] From $\gamma\gamma$(t).

[#] Evidence for this level is from ^{150}Nd(n,γ).

[@] In ^{150}Nd(n,γ) this level is based on energy sums involving 196.1γ and 474.2γ. Neither of these are seen by 1984Ka12 who base level on (189γ)(343γ). 343γ is masked by contaminant in ^{150}Nd(n,γ).

γ(^{151}Nd)

E$_\gamma$[†]	I$_\gamma$[‡]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
22.5 *2*		22.5	(5/2)$^+$	0.0	3/2$^+$
35.3 *2*		57.7	(3/2)$^-$	22.5	(5/2)$^+$
53.5 *2*		75.9	(7/2)$^+$	22.5	(5/2)$^+$
57.7 *2*		57.7	(3/2)$^-$	0.0	3/2$^+$
60.5 *2*		249.5	(5/2)$^-$	189.0	(3/2)$^-$
72.0 *2*		177.8	(7/2$^-$)	105.8	5/2$^-$
76.0 *2*		75.9	(7/2)$^+$	0.0	3/2$^+$
83.3[#] *2*	≈2.5[#]	105.8	5/2$^-$	22.5	(5/2)$^+$
83.3[#] *2*	<0.3[#]	189.0	(3/2)$^-$	105.8	5/2$^-$
86.3 *2*		335.6	(7/2)$^-$	249.5	(5/2)$^-$
105.8 *2*	≈1.4	105.8	5/2$^-$	0.0	3/2$^+$
107.9 *2*	≈0.6	443.5	(9/2)$^-$	335.6	(7/2)$^-$
131.4 *2*		189.0	(3/2)$^-$	57.7	(3/2)$^-$
146.5 *2*	<0.06	335.6	(7/2)$^-$	189.0	(3/2)$^-$
155.3 *2*		177.8	(7/2$^-$)	22.5	(5/2)$^+$
166.6 *2*		189.0	(3/2)$^-$	22.5	(5/2)$^+$
173.8 *2*	≈0.6	249.5	(5/2)$^-$	75.9	(7/2)$^+$
189.0 *2*		189.0	(3/2)$^-$	0.0	3/2$^+$
191.8 *2*	≈0.4	249.5	(5/2)$^-$	57.7	(3/2)$^-$
194 *1*		443.5	(9/2)$^-$	249.5	(5/2)$^-$
227.1	<0.3	249.5	(5/2)$^-$	22.5	(5/2)$^+$
229.7 *2*	≈0.05	335.6	(7/2)$^-$	105.8	5/2$^-$
249.6	≈1.6	249.5	(5/2)$^-$	0.0	3/2$^+$

Continued on next page (footnotes at end of table)

^{150}Nd(d,pγ) 1984Ka12 (continued)

$\gamma(^{151}Nd)$ (continued)

E_γ †	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π
259.8	<0.1	335.6	$(7/2)^-$	75.9	$(7/2)^+$
266 *1*	≈0.3	443.5	$(9/2)^-$	177.8	$(7/2^-)$
306.3 *2*	≈0.4	495.2	$(1/2)^-$	189.0	$(3/2)^-$
313.2 *2*	≈0.5	335.6	$(7/2)^-$	22.5	$(5/2)^+$
317.9 *2*	≈0.7	506.9	$(3/2)^-$	189.0	$(3/2)^-$
342.6 *2*	≈0.6	531.6	$(5/2^-,7/2^-)$	189.0	$(3/2)^-$
401.2 *2*		506.9	$(3/2)^-$	105.8	$5/2^-$
421.6 *2*	≈0.50	599.2	$(5/2)^+$	177.8	$(7/2^-)$
437.6 *3*		495.2	$(1/2)^-$	57.7	$(3/2)^-$
484.4 *2*		506.9	$(3/2)^-$	22.5	$(5/2)^+$
493.4 *2*	≈0.2	599.2	$(5/2)^+$	105.8	$5/2^-$
495.1 *2*		495.2	$(1/2)^-$	0.0	$3/2^+$
523.2 *2*		599.2	$(5/2)^+$	75.9	$(7/2)^+$
542.8 *2*		542.8	$(1/2$ to $7/2)^+$	0.0	$3/2^+$
643.3 *2*	≈0.6	892.9	$1/2^-,3/2^-$	249.5	$(5/2)^-$
657.6 *2*	≈3.5	846.6	$1/2^-,3/2^-$	189.0	$(3/2)^-$
703.9 *2*	≈1.1	892.9	$1/2^-,3/2^-$	189.0	$(3/2)^-$
760.1 *2*	≈1.2	949.1	$(1/2^-,3/2,5/2^+)$	189.0	$(3/2)^-$
843 *1*		949.1	$(1/2^-,3/2,5/2^+)$	105.8	$5/2^-$

† Uncertainties estimated by evaluator.

‡ Not given by 1984Ka12. For a number of transitions, particularly those seen only in this reaction, the evaluator has used peak heights in the published spectra and Iγ values from the ^{149}Nd(n,γ) reaction to make rough estimates of γ intensities. These estimates are probably good to within a factor of 2.

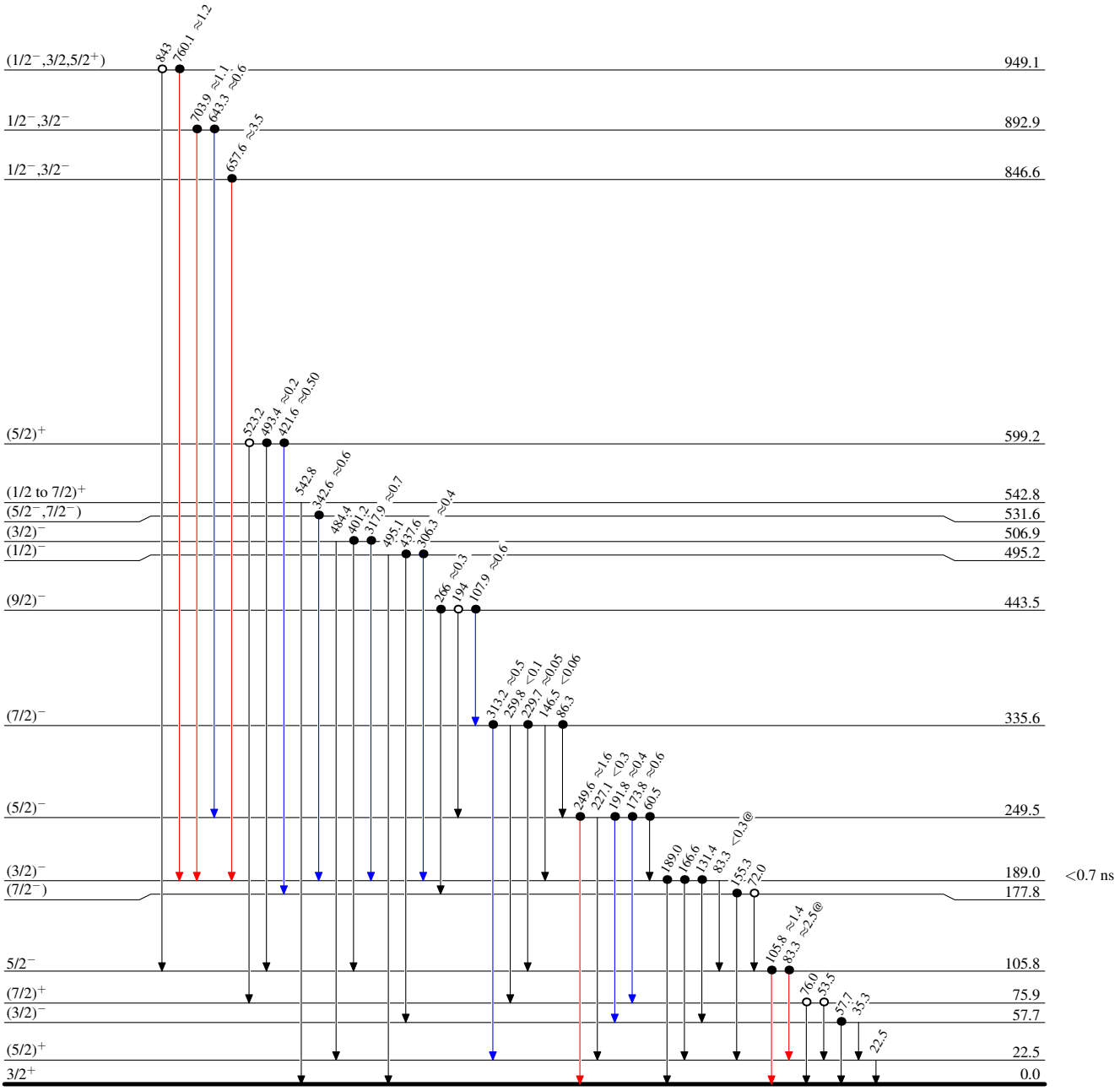
Multiply placed with intensity suitably divided.

^{150}Nd(d,pγ) 1984Ka12

Level Scheme

Intensities: Relative I_γ
@ Multiply placed: intensity suitably divided

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
Coincidence
Coincidence (Uncertain)



$^{151}_{60}Nd_{91}$