^{142}Nd(d,p),(d,pγ),(pol d,p) 1975Ve08,1975Bo03,1974Ba49

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 113, 715 (2012)	31-May-2011

E=19 MeV (1975Bo03), 16.07 MeV (1975Ve08), 12 MeV (1967Ch16,1967Wi08), 12.3 MeV (1974Ba49).
Measured: σ(E,θ), DWBA analysis (1975Ve08,1975Bo03,1967Ch16,1967Wi08), vector analyzing power (VAP) on polarized d (1974Ba49), γ, pγ coin (1967Ch16).
Others: 1977St33, 1974No05, 1974Bo32, 1967Ne04.
For comparison of excitation strengths in (n,γ) and (d,p) see 1974Ge16.

^{143}Nd Levels

E(level)†	Jπ#	L	C^{2}S‡	Comments
0.0	7/2$^-$	3	0.75	Jπ: J=L+1/2 from VAP (1974Ba49).
740.0 *10*	3/2$^-$	1	0.40	Jπ: J=L+1/2 from VAP (1974Ba49).
1230 *5*	13/2$^+$	6	0.45	
1305.0 *15*	1/2$^-$	1	0.38	Jπ: J=L−1/2 from VAP (1974Ba49).
1411 *5*	9/2$^-$	5	0.58	
1436 *5*				
1562 *5*	5/2$^-$	3	0.19	Jπ: J=L−1/2 from VAP (1974Ba49).
1616 *5*	1/2$^+$	0	0.008	
1746 *5*	9/2$^-$	5	0.23	
1845 *10*	3/2$^-$	1	0.10	E(level),L,C^{2}S: from 1977St33; see also 1975Bo03, 1967Wi08, 1974Ba49; see comment to the 1858 level.
1858 *5*	7/2$^-$	3	0.13	E(level),L,C^{2}S: from 1975Ve08, 1967Ch16. Jπ: parent of 7/2$^-$ IAR in ^{143}Pm (1977Cl02). E(level),Jπ: probably 1845 and 1858 levels are identical with 1852.5 (3/2$^-$) and 1851.5 (7/2$^-$) levels observed in (α,nγ).
1918 *5*	5/2$^-$	3	0.20	
2003 *5*	1/2$^-$	1	0.01	
2019 *5*	7/2$^-$,5/2$^-$	3	0.03,0.05	L: from 1967Ch16, 1967Wi08; L=(4) or (3) in 1975Ve08.
2075 *5*	11/2$^-$	5	0.025	
2101 *5*	7/2$^-$,5/2$^-$	3	0.04,0.06	
2137 *5*	3/2$^-$,1/2$^-$	1	0.04,0.08	
2198 *5*	7/2$^-$	3	0.05	
2257 *5*	3/2$^-$,1/2$^-$	1	0.03,0.06	
2257 *5*	5/2$^{(-)}$	(3)		E(level),L: from 1975Bo03.
2324 *5*	3/2$^-$	1	0.03	
2363 *5*	3/2$^-$	1	0.05	
2408 *5*		(1)		C^{2}S: 0.009 or 0.004 for L=(1) or (2) in 1975Ve08 (if J=3/2).
2422 *5*	3/2$^-$	1	0.02	
2436 *5*	5/2$^-$	3	0.02	
2462 *10*	(3/2$^-$,1/2$^-$)	(1)	0.04,0.08	E(level),L,C^{2}S: from 1975Bo03.
2464 *5*	5/2$^-$	3	0.02	
2496 *10*	1/2$^-$,3/2$^-$	1		E(level),L,C^{2}S: from 1975Bo03; C^{2}S=0.03.
2501 *5*	7/2$^-$	3	0.02	
2539 *5*	3/2$^-$	1	0.05	
2563 *5*	7/2$^-$,5/2$^-$	3	0.05,0.08	
2596 *5*				
2621 *5*	3/2$^-$,1/2$^-$	1	0.01,0.02	
2673 *5*	3/2$^-$	1	0.01	
2695 *5*	3/2$^-$,1/2$^-$	1	0.03,0.06	
2750 *5*				
2778 *5*				
2811 *5*	13/2$^+$	6	0.21	
2843 *5*	3/2$^{(-)}$,1/2$^{(-)}$	(1)	0.004,0.00 *8*	L: L=(2) with C^{2}S′=0.007 for J=3/2 is also possible (1975Ve08).

Continued on next page (footnotes at end of table)

^{142}Nd(d,p),(d,pγ),(pol d,p) 1975Ve08,1975Bo03,1974Ba49 (continued)

^{143}Nd Levels (continued)

E(level)[†]	Jπ[#]	L	C^2S[‡]	Comments
2926 *5*	7/2−,5/2−	3	0.008,0.01	
2968 *5*				
3024 *5*				
3049 *5*	(9/2)+	4	0.008	
3096 *5*				
3122 *5*				L,C^2S: L=3, C^2S=0.02 or 0.03 (1975Ve08), L=1, C^2S=0.03 (1975Bo03).
3164 *5*	1/2+	0	0.006	
3202 *5*	3/2−,1/2−	1	0.005,0.01	
3233 *5*	7/2−,5/2−	3	0.01,0.02	
3255 *5*	7/2−,5/2−	3	0.01,0.02	
3274 *5*				
3311 *5*				
3329 *5*				
3379 *5*	7/2−,5/2−	3	0.02,0.04	
3400 *5*				
3413 *5*				L,C^2S: L=3; C^2S=0.03 or 0.05 (1975Ve08), L=1; C^2S=0.007 or 0.014 (1975Bo03).
3435 *5*	7/2−,5/2−	3	0.008,0.01	
3459 *5*	(3/2)+	2	0.02	
3484 *5*				L,C^2S: L=3; C^2S=0.06 or 0.09 (1975Ve08); L=1; C^2S=0.07 or 0.14 (1975Bo03).
3515 *5*	7/2−,5/2−	3	0.02,0.03	
3538 *5*	7/2−,5/2−	3	0.006,0.01	
3579 *5*				L,C^2S: L=3; C^2S=0.04 or 0.06 (1975Ve08); L=1; C^2S=0.05 or 0.10 (1975Bo03).
3603 *5*				
3625 *5*				
3645 *5*				
3668 *5*	7/2−,5/2−	3	0.009,0.02	
3685 *5*				L,C^2S: L=3; C^2S=0.009 or 0.02 (1975Ve08); L=1; C^2S=0.05 or 0.10 (1975Bo03).
3733 *5*				
3774 *5*				
3815 *5*	3/2−,1/2−	1	0.02,0.04	
3831 *5*				
3856 *5*				
3882 *5*				
3916 *5*	7/2−,5/2−	3	0.02,0.03	
3939 *5*				
3955 *5*				
3970 *5*				
4010 *5*				
4064 *5*				
4087 *5*				
4129 *5*				
4168 *5*				
4198 *5*				
4267 *5*				
4287 *5*				
4316 *5*				
4348 *5*				
4399 *5*				
4430 *5*				

[†] From 1975Ve08.
[‡] From 1975Ve08, unless otherwise noted. Values of 1975Bo03 for L=1,3 levels are 30-40% higher than in 1975Ve08. Pairs of values correspond to J=L+1/2 and J=L−1/2, respectively.
[#] Value used for C^2S value given.

^{142}Nd(d,p),(d,pγ),(pol d,p) 1975Ve08,1975Bo03,1974Ba49 (continued)

$\gamma(^{143}Nd)$

E_γ	E_i(level)	J_i^π	E_f	J_f^π
565	1305.0	$1/2^-$	740.0	$3/2^-$
740	740.0	$3/2^-$	0.0	$7/2^-$

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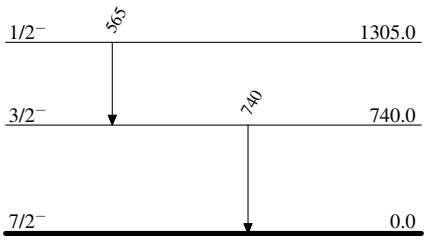
Level Scheme



$^{143}_{60}Nd_{83}$