^{28}Si(^{32}S,2p2nγ) 2006Jo03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huo Junde, Huo Su, Yang Dong	NDS 112, 1513 (2011)	29-Oct-2009

E=130 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$, γp coin, γn coin using Gammasphere of 78 Compton-suppressed Ge detectors for γ rays, 4π CsI Microball array for charged particles and a shell consisting of 30 liquid scintillator detectors for neutrons.

^{56}Ni Levels

E(level)[†]	J$^\pi$[‡]	E(level)[†]	J$^\pi$[‡]	E(level)[†]	J$^\pi$[‡]	E(level)[†]	J$^\pi$[‡]
0.0[#]	0$^+$	6522.1 *18*	5	9009.7 *17*	9$^+$	11420.6 *17*	11$^+$
2700.3[#] *9*	2$^+$	6650.5 *15*	6$^+$	9240.5 *22*	(8$^+$)	11866.7 *22*	(10$^+$)
3924.3[#] *12*	4$^+$	7601.4 *17*	(7$^+$)	9418.3[#] *17*	10$^+$	12358.8[#] *18*	12$^+$
4932.3 *16*	3$^+$,5$^+$	7954.7[#] *15*	8$^+$	9477.7 *17*	(9$^+$)	13505.7 *18*	(12)
5316.3[#] *15*	6$^+$	8223.7 *16*	8$^+$	10469.7 *18*	9		
5665.1 *15*	5	8778.5 *17*	(7)	10677.3 *17*	10$^+$		

[†] From least-squares fit to Eγ's.
[‡] From multipolarity of gamma-rays.
[#] Band(A): g.s. band.

γ(^{56}Ni)

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[†]	Comments
787 *1*	5.9 *5*	9009.7	9$^+$	8223.7	8$^+$	E2+M1	
857 *1*	3.8 *4*	6522.1	5	5665.1	5		
1008 *1*	4.7 *5*	4932.3	3$^+$,5$^+$	3924.3	4$^+$	E2+M1	R$_{30-83}$=0.4 *2*.
1055 *1*	7.2 *6*	9009.7	9$^+$	7954.7	8$^+$	E2+M1	R$_{30-83}$=0.7 *2*.
1224 *1*	100 *3*	3924.3	4$^+$	2700.3	2$^+$	E2	R$_{30-83}$=1.3 *1*.
1304 *1*	2.6 *4*	7954.7	8$^+$	6650.5	6$^+$	E2	
1392 *1*	69 *3*	5316.3	6$^+$	3924.3	4$^+$	E2	R$_{30-83}$=1.4 *1*.
1463 *1*	17 *1*	9418.3	10$^+$	7954.7	8$^+$	E2	R$_{30-83}$=1.4 *2*.
1523 *1*	2.1 *4*	9477.7	(9$^+$)	7954.7	8$^+$	(E2+M1)	R$_{30-83}$=1.4 *4*.
1681 *1*	2.6 *5*	12358.8	12$^+$	10677.3	10$^+$	E2	
1741 *1*	7.9 *8*	5665.1	5	3924.3	4$^+$	D	Mult.: ΔJ=1.
							R$_{30-83}$=0.6 *2*.
1876 *2*	1.4 *4*	9477.7	(9$^+$)	7601.4	(7$^+$)		
2002 *1*	3.7 *16*	11420.6	11$^+$	9418.3	10$^+$	E2+M1	R$_{30-83}$>1.
2086 *1*	2.6 *5*	13505.7	(12)	11420.6	11$^+$	D	Mult.: ΔJ=1.
2285 *1*	7.3 *13*	7601.4	(7$^+$)	5316.3	6$^+$	(E2+M1)	R$_{30-83}$>1.
2412 *1*	3.2 *6*	11420.6	11$^+$	9009.7	9$^+$	E2	
2453 *1*	4.1 *6*	10677.3	10$^+$	8223.7	8$^+$	E2	R$_{30-83}$=1.5 *4*.
2515 *1*	2.1 *8*	10469.7	9	7954.7	8$^+$	D	Mult.: ΔJ=1.
							R$_{30-83}$=1.0 *3*.
2638 *1*	31 *2*	7954.7	8$^+$	5316.3	6$^+$	E2	R$_{30-83}$=1.4 *2*.
2700 *1*	100 *4*	2700.3	2$^+$	0.0	0$^+$	E2	R$_{30-83}$=1.2 *1*.
2726 *1*	5.8 *12*	6650.5	6$^+$	3924.3	4$^+$	E2	R$_{30-83}$=1.2 *4*.
2908 *1*	12 *1*	8223.7	8$^+$	5316.3	6$^+$	E2	R$_{30-83}$=1.0 *2*.
2940 *1*	5.1 *7*	12358.8	12$^+$	9418.3	10$^+$	E2	R$_{30-83}$=1.2 *3*.
3114 *2*	<1	8778.5	(7)	5665.1	5		
3462 *1*	2.1 *4*	8778.5	(7)	5316.3	6$^+$		
3912 *2*	<1	11866.7	(10$^+$)	7954.7	8$^+$	(E2)	
3924 *2*	1.5 *4*	9240.5	(8$^+$)	5316.3	6$^+$	(E2)	

Continued on next page (footnotes at end of table)

^{28}Si(^{32}S,2p2nγ) **2006Jo03 (continued)**

$\gamma(^{56}Ni)$ (continued)

† From R_{30-83}=Iγ(30°)/Iγ(83°) deduced from $\gamma\gamma$ matrix.Value of ≈1.3 is expected for ΔJ=2 stretched quadrupole, and ≈0.8 for ΔJ=1 dipole transitions. Values quite different from two suggest ΔJ=1 or 0 with M1+E2 admixtures.

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Level Scheme

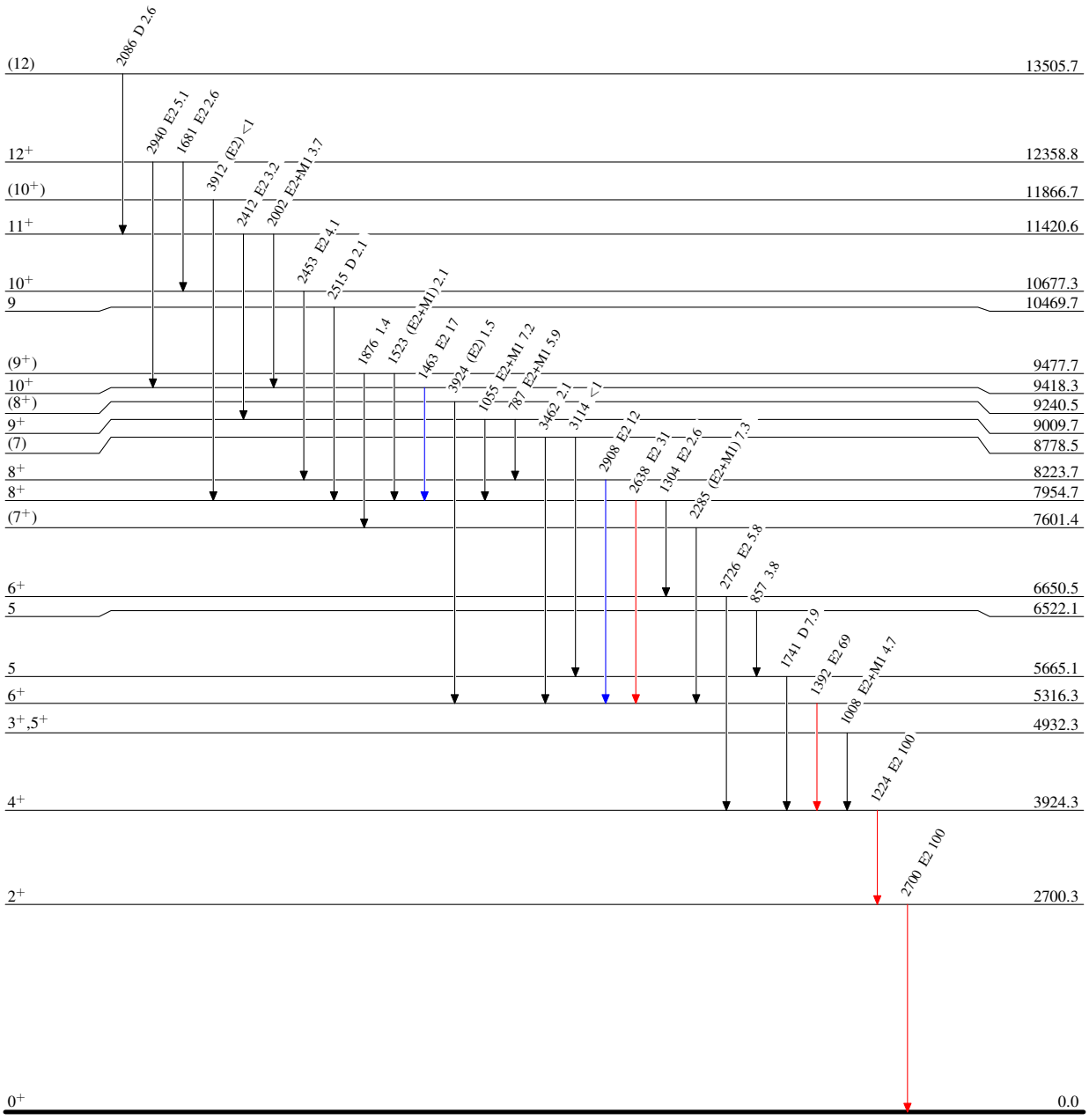
Intensities: Relative I_γ

Legend

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

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

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



$^{56}_{28}Ni_{28}$

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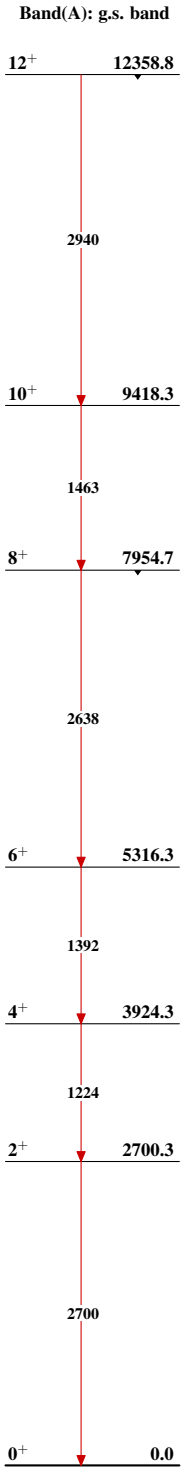

$^{56}_{28}Ni_{28}$