^{28}Si(p,^{3}He)   2012Ch31

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia and A. M. Hurst	NDS 134,1 (2016)	1-Feb-2016

J^π(^{28}Si)=0$^+$.

Target: 92% enriched ^{28}Si (thickness 200 μg/cm^2; Projectile: proton, E=40 MeV; Recoiling ^{3}He particle spectra measured using SIDAR array, in ΔE-E arrangement. FWHM=80-180 keV. Protons from the excited states were detected using ORRUBA array, consists of six 65-mm-thick non-resistive strip silicon detectors; Proton-^{3}He coincidences were measured to obtain proton branching ratios. The $\sigma(\theta)$ distributions were also measured and analyzed using DWBA analysis.

The %p branching ratios were determined from (^{3}He)p coincidences.

S(p)(^{26}Al)=6306.31 *5* (2012Wa38).

^{26}Al Levels

E(level)†‡	J$^{\pi \&}$	L^a	Comments
0.0 *6*	5$^+$		
223 *10*	0$^+$	0	
424 *10*	3$^+$		
1061 *5*	1$^+$		
1834 *9*	1$^+$		
2073$^\#$ *7*	4$^+$,2$^+$,1$^+$		
2362 *8*	3$^+$		
2552 *7*	3$^+$		
2907 *4*	2$^+$		
3161 *5*	2$^+$		
3417 *9*	5$^+$		
3714 *15*	1$^+$		
3980 *9*	0$^-$		
4439 *7*	2$^-$		
4722 *9*	(4$^+$)		
4978$^\#$ *9*	3$^+$,2$^-$		
5196 *14*	(0$^+$)		
5592$^\#$ *31*	(2,3)$^-$	(1,2)	
5687$^\#$ *26*	(3$^-$)		
5965 *10*	1$^{(+)}$		
6290 *22*	(3$^+$)		
6417$^\#$ *19*			
6827$^\#$ *30*			%p=47 *24* (2012Ch31)
7163$^\#$ *14*			%p=76 *29* (2012Ch31)
7489$^\#$ *33*			%p=90 *65* (2012Ch31) %p is for 7489+7627.
7627$^\#$ *20*			%p=90 *65* (2012Ch31) %p is for 7489+7627.
7910$^\#$ *29*	(5$^+$,6$^+$)	(1,2)	%p=115 *21* (2012Ch31) L: ≥4 value could not be ruled out in 2012Ch31.
8183$^@$ *17*		(1,2)	%p=70 *11* (2012Ch31)
8369$^@$ *30*		2	%p=86 *72* (2012Ch31) %p is for 8369+8616.
8616 *21*	(5,6)$^+$	1	%p=86 *72* (2012Ch31) %p is for 8369+8616. J$^\pi$: previous (5,6)$^+$ inconsistent with L=1 in 2012Ch31.
8815$^@$ *19*		(3)	%p=78 *36* (2012Ch31)
9060 *16*	(4)	(1,3)	%p=48 *15* (2012Ch31)

Continued on next page (footnotes at end of table)

^{26}Al Levels (continued)

E(level)[†][‡]	J$^\pi$[&]	L[a]	Comments
9397[@] *21*		(1,3)	%p=73 *35* (2012Ch31)
9547[@] *22*		(3)	
9920 *26*	(5$^-$)		

[†] Known energies at 0, 228, 417, 1058, 1851, 2070, 2365, 2545, 2913. *3160*, 3403, 4431, 5195, 5950, 6852, 9060 were used for calibration.

[‡] From 2012Ch31.

[#] doublet or multiplet.

[@] New level reported in 2012Ch31.

[&] From Adopted Levels.

[a] From DWBA analysis of $\sigma(\theta)$ distributions in 2012Ch31.