

$^{29}\text{Si}(^3\text{He},\text{d})$ **1976Dy01,1974He04**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia, A. Chakraborty		NDS 197,1 (2024)	31-May-2024

$J^\pi(^{29}\text{Si})=1/2^+$.

Other: [1994Ve04](#), [1980Kh03](#), [1970Gr30](#).

1976Dy01: Target: SiO_2 , Si either natural composition or enriched ^{29}Si (92.0%); Projectile: ^3He , $E=25$ MeV; two surface barrier detectors at $\pm 30^\circ$ on either side of the beam direction, Enge split-pole spectrometer, particles detected either by photo emulsions or by six position-sensitive solid state detectors; deduced level energy, J^π and spectroscopic strength.

1974He04: Target: 95% enriched ^{29}Si ; Projectile: ^3He , $E=15$ MeV; multigap spectrometer at 15 angles from 3.75° to 56.25° in 3.75° intervals, energy resolution in the range of 22 to 25 keV FWHM, proton-deuteron discrimination by kinematics and track identification; deduced level energy, l_p , J^π and spectroscopic strength.

 ^{30}P Levels

E(level) [†]	J^π [†]	l_p [‡]	G_j [#]	Comments
0		0	0.74	G _j : spectroscopic factors 0.88 ($2s_{1/2}$) and 0.19 ($1d_{3/2}$) (1994Ve04).
677 5		0	0.23	
709 5		0,2	0.09	G _j : and 0.45 (mixed).
1454 5		2	0.81	G _j : or (0.61). Other: spectroscopic factors 0.02 ($1d_{5/2}$) and 0.70 ($1d_{3/2}$) (1994Ve04).
1973 5		2	0.12	G _j : and 0.21 (mixed).
2538 5		2	0.09	G _j : and 0.23 (mixed).
2723 5		2	0.10	G _j : or (0.08).
2838 5			0.04	
2939 5		2	0.80	G _j : or (0.60). Other: spectroscopic factors 0.07 ($1d_{5/2}$) and 0.54 ($1d_{3/2}$) (1994Ve04).
3018 5		0,2	0.08	G _j : and 0.11 (mixed).
3304 5	(1 ⁺)			
3731 5	1 ⁺	0,2	0.03	G _j : and 0.08 (mixed).
3834 5	2 ⁺ , 1 ⁺	2	0.11	J^π : from 1974He04 .
3927 5	1 ⁻	1	0.005	J^π : from 1974He04 .
4142 5		1	0.14	
4182 5		2	0.20	G _j : or (0.16).
4232 5		(3)	1.10	
4298 5				
4343 5				
4423 5		2	0.01	G _j : and 0.01 (mixed).
4468 5		0	0.11	
4501 5		2	0.47	
4625 5		3	(0.80)	G _j : or 0.54.
4739 5	(1 ⁺ to 3 ⁺)		0.01	
4921	3 ⁻	3		E(level), J^π : from 1974He04 .
4933 5				
5028 5				
5233 5	(2 to 4) ⁻		0.01	
5416 5	(0 to 2) ⁻	1	0.07	
5505 5	1 ⁺	2	0.03	G _j : and 0.05 (mixed).
5574 5	(2 ⁺ , 3 ⁺)		0.07	G _j : and 0.09 (mixed).
5598	(1 to 3) ⁺	2		E(level), J^π : from 1974He04 .
5711 5				
5808 5	(1 to 3) ⁺			
5905 5	2 ⁻ , 1 ⁻	1	0.35	J^π : from 1974He04 .
5993 5	1 ⁻	1	0.33	J^π : from 1974He04 .
6092 5			0.90	G _j : or 0.59.
6179 5				
6231 5				
6270 5			0.06	G _j : value for $l=1$ in 1976Dy01 .
6301 5				

Continued on next page (footnotes at end of table)

$^{29}\text{Si}(^3\text{He},\text{d})$ [1976Dy01](#), [1974He04](#) (continued) ^{30}P Levels (continued)

E(level) [†]	J ^π [†]	I_p [‡]	G_i [#]	Comments
6478 5	1 ⁽⁺⁾	0	0.05	J ^π : new assignment in 1976Dy01 . I _p : from 1976Dy01 .
6518 5	(1 to 3) ⁺		0.04	
6599 5				
6648 5	(2 ⁻ to 4 ⁻)			
6674 5				
6789 5				
6851 5				
6877 5			0.34	
6921 5			0.23	
7013 5			0.05	
7048 5			0.95	
7176 10				
7176 10		1	0.17	I _p : from 1976Dy01 .
7199 10				
7224 10				
7281 10				
7308 10				
7328 10				
7380 10				
7472 10				
7559 10				
7582 10				
7606 10				
7643 10				
7690 10				
7751 10				
7897 10				
8109 10				
8202 10				
8282 10				
8353 10				
8628 10				

[†] From [1976Dy01](#), except otherwise noted. [1974He04](#) reported levels upto 5994 keV and quoted level energies from compilation.

[‡] I_p values from [1974He04](#), except where otherwise noted.

[#] Spectroscopic strength $G_j = [(2J_f + 1)/(2J_i + 1)]C^2S_j$ from [1976Dy01](#). Spectroscopic strengths of [1974He04](#) are in good agreement with those of [1976Dy01](#).