^{51}V(d,α),(pol d,α) 1984Sh20,1984Na24

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	T. W. Burrows[a]	NDS 109, 1879 (2008)	14-Jul-2008

Target J$^\pi$=7/2$^-$, configuration=((^{48}Ca 0$^+$)(π 1f$_{7/2}$)$^{+3}_{7/2}$).

1984Na24: E=79.4 MeV. Measured σ(θ) and vector-analyzing power (VAP); Q2DM spectrometer (position-sensitive α(P),scin). Vector polarization=+0.55 and −0.59; tensor≤0.04. FWHM=50-60 keV. θ(C.M.)≈5°−50°. DWBA.

1984Sh20: E=28 MeV. Measured σ(θ); Q3D spectrometer. θ=15°, 25°, and 30°. DWBA.

Others: see 1995Bu23.

All data are from 1984Sh20 and J$^\pi$ arguments, from 1984Na24; data from 1984Na24 and 1984Sh20 are In good agreement, except As noted. Both groups also compared their results to (p,π$^-$) measurements.

^{49}Ti Levels

E(level)	J$^\pi$†	L‡
0.	7/2$^-$ to 19/2$^-$#	4+6
1382@ 5		
1.543×10^3 5	&	4+6
1.623×10^3 5	7/2$^-$ to 19/2$^-$#	4+6
1761@ 5		
2.264×10^3 5	&	4+6
2.470×10^3 a 5		4
2.504×10^3 a 5		
2.664×10^3 5		
2.722×10^3 5	7/2$^-$ to 19/2$^-$#	4+6
2.984×10^3 5	7/2$^-$ to 19/2$^-$#	4+6
3.048×10^3 5	7/2$^-$ to 19/2$^-$#	4+6
3.291×10^3 5	7/2$^-$ to 19/2$^-$#	4+6
3.460×10^3 5	7/2$^-$ to 19/2$^-$#	4+6
3617@ 5		
3755@ 5		
3833@ 5		
3.967×10^3 5	7/2$^-$ to 19/2$^-$#	4+6
4086@ 5		
4.223×10^3 5	7/2$^-$ to 19/2$^-$#	4+6
4.386×10^3 5	7/2$^-$ to 19/2$^-$	6
4.593×10^3 5		
5127@ 10		
5606@ 10		
5933@ 10		
6125@ 10		
6231@ 10		
6269@ 10		
6513@ 10		

† Arguments from 1984Na24 are based on the empirical observation that pickup In the (f$_{7/2}$)$^2_{J=7,T=0}$ and (f$_{7/2}$,p$_{3/2}$)$_{J=5,T=0}$ couplings are about one order of magnitude stronger than for other couplings. Therefore, high-spin states belonging to the ((^{51}V 7/2$^-$) (f$_{7/2}$)$^{-2}_{J}$ $_{J=7,T=0}$) should Be strongly excited with characteristic L=6 σ(θ) and J=7 VAP shapes. See 1984Sh20 for spin and parity assignments based on DWBA calculations and relative yields.

‡ From comparison of σ(θ) to empirical curves.

σ(θ) shows predominant L=6 pattern and VAP shows a clear J=7 signature, suggesting significant ((^{48}Ca 0$^+$)(π 1f7/2)^2(ν 1f7/2)$^{-1}$).

@ From 1984Sh20; not identified by 1984Na24.

& J$^\pi$ mixture of J=7 and J=5 patterns.

a VAP bears No resemblance to J=5 pattern, leading 1984Na24 to suggest that more than one member of the 2471, 2504, and 2506 triplet contribute to the observed σ(θ) and VAP.