^{49}Ti(t,α) 1967Sc03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 179, 1 (2022)	30-Nov-2021

$J^{\pi}(^{49}\text{Ti})=7/2^{-}$.

1967Sc03: E=20 MeV triton beam was produced from the Los Alamos three-stage Van de Graaff accelerator. Targets were 68% enriched ^{48}Ti and natural Ti. α particles were detected with a surface-barrier counter (FWHM=60 keV). Measured $\sigma(\theta=20^{\circ}$ to $50^{\circ})$. Deduced levels, L-transfers.

^{48}Sc Levels

E(level)†	L#	E(level)†	Jπ‡	L#	E(level)†	L#	E(level)†	Jπ‡	L#
0.0	3	610 *20*		3	2100 *20*	0	2530 *20*		0
230	3	1170 *20*	7	3	2140 *20*	2	2700 *20*	1	3
388 *20*	2	1872 *20*		2	2360 *20*				

† From 1967Sc03. Comparison with (d,^{3}He) and Adopted Levels suggests that levels from (t,α) above 1800 may be systematically too low by 20-35 keV.

‡ From least-squares fit to particle-hole transformation equations relating the $(f_{7/2})(f_{7/2})^{-1}$ ^{48}Sc spectrum to the $(f_{7/2})^2$ ^{42}Sc spectrum assuming J^{π}(g.s.,131,230,610,7150)=6,5,5,3,0 (1967Sc03).

From comparisons of measured $\sigma(\theta)$ with theoretical calculations (1967Sc03).