^{50}Ti(e,e′) 1985So05,1988Se02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 157, 1 (2019)	15-Apr-2019

1985So05: E=30-57 MeV beams from the Darmstadt 70-MeV electron linear accelerator DALINAC. 24.1% ^{48}Ti contamination in target. Measured $\sigma(\theta$=165°,141°,129°,105°). DWBA.

1988Se02: E=70-209 MeV beams from the 500-MeV electron scattering facility at NIKHEF-K. Measured $\sigma(\theta$=154°); E=106-309 MeV. Measured $\sigma(\theta$=40-85°). 22.8% ^{48}Ti contamination removed by a comparison with a separate study using 99.1% enriched ^{48}Ti. FWHM=15-55 keV.

1971He08: E=198, 299 MeV beams from the Stanford Mark III electron accelerator. Measured $\sigma(\theta)$ (momentum transfer q≈0.5-2.8 fm^{-1}); magnetic spectrograph, 100-channel scintillation detector, DWBA, partial wave analysis. See 1971He08 for results using a non-Gaussian shape to describe the form factors.

Others:

1982WoZS (thesis): E=100 MeV. Measured $\sigma(\theta)$, deduced deformation length.

1977HoYY (conference paper): measured $\sigma(\theta)$. Deduced L values and B(Eλ) for 1555, 2680 and 4420 levels.

1973Ph02: E=209 MeV. Measured $\sigma(\theta)$ for the first 2$^+$, 3$^-$ and 4$^+$ levels.

See 1985So05 and 1988Se02 for transition radii.

See 1985So05 for model-dependent derivations of B(Mλ)↑ and 1988Se02 for B(Mλ)↑ based on a two-parameter single-particle Woods-Saxon analysis. 1985So05 derive ΣB(M1)↑=4.5 *5*.

^{50}Ti Levels

E(level)[†]	L or Mult[†]	Comments
0		
1554[‡]	2,C2[‡]	B(E2)↑=0.0307 *10* (1971He08)
2675[‡]	4,C4[‡]	B(E4)(W.u.)=4.70 *15* (1971He08).
3199[‡]	C6[‡]	
4.320×10^3	2	B(E2)↑=0.0051 *8* (1971He08) E(level): from 1971He08.
4.42×10^3	3	B(E3)(W.u.)=3.76 *15* (1989Sp01,1971He08). E(level): from 1971He08; 4409.99 keV in Adopted Levels.
4884[‡] *5*	M5[‡]	
7293[‡] *10*	M4[‡]	
8407[‡] *12*	M3[‡]	Unresolved purely transverse multiplet (1988Se02).
8.56×10^3 *2*	M1	
8.64×10^3 *2*	M2	
8.72×10^3 *2*	M2,(E3)	
8755[‡] *7*	M8[‡]	
8.81×10^3 *2*	M1	
8.87×10^3 *2*	(E2)	
8.89×10^3 *2*	Q,(E3)	
8.98×10^3 *2*	(E3)	
9.05×10^3 *2*	M2	
9061[‡] *12*	M3[‡]	
9188[‡] *15*	M5,(M6)[‡]	
9.21×10^3 *2*	E1,(M1)	
9.24×10^3 *2*	M1(M2,E2)	
9.28×10^3 *2*	M1(M2,E1)	
9.37×10^3 *2*	M1,(Q)	
9442[‡] *10*	M8[‡]	
9.93×10^3 *2*	M1	
10.00×10^3 *2*	M2,(M1)	

Continued on next page (footnotes at end of table)

^{50}Ti(e,e′) 1985So05,1988Se02 (continued)

^{50}Ti Levels (continued)

E(level)†	L or Mult†	E(level)†	L or Mult†	E(level)†	L or Mult†	E(level)†	L or Mult†
10.03×10^3 *2*	M1+E3	10.45×10^3 *2*	M1	10.95×10^3 *2*	E1,(M1)	11.29×10^3 *2*	(Q,E3)
10.14×10^3 *2*	M1,M2	10.54×10^3 *2*	M1,(M2)	10.97×10^3 *2*	M2,(M3)	11.31×10^3 *2*	M2,(M1)
10.17×10^3 *2*	M1	10.58×10^3 *2*	M1	11.03×10^3 *2*	M1(M2,E1)	11.35×10^3 *2*	M2,(M1)
10.21×10^3 *2*	E1,(M1)	10.66×10^3 *2*	M1	11.07×10^3 *2*	E1,(M1)	11.42×10^3 *2*	M2
10.25×10^3 *2*	E3(M1,M2)	10.80×10^3 *2*	M1,(E1,Q)	11.13×10^3 *2*	M2(M1,E2)	11.61×10^3 *2*	E1,(M1)
10.33×10^3 *2*	M1	10.87×10^3 *2*	E1(M1,M2)	11.19×10^3 *2*	E1,(M2)	11.83×10^3 *2*	M2
10.38×10^3 *2*	M2,(M1)	10.90×10^3 *2*	E2	11.22×10^3 *2*	M2,(M1)		

† E(level) and multipolarities are from 1985So05, except as noted. ΔE(level)<10 keV for stronger transitions to 20 keV for some of the weaker ones. Multipolarity determined by model-independent analysis (1972ThZF). Angular momentum transfers are from 1971He08.

‡ From 1988Se02. Multipolarity from theoretical fit to the shape experimental form factor. Cλ values are the multipole order for longitudinal excitation. Multipolarities not adopted by evaluators.