

⁴⁰Ca(pol ⁶Li,D),(⁶Li,pnγ) 1999Ve11,2011Mi02

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen, Balraj Singh and John A. Cameron		NDS 112, 2357 (2011)	31-Jul-2011

1999Ve11: E=34 MeV polarized ⁶Li²⁺ beam produced from the Super FN Tandem accelerator at Florida State University. Target of 0.9 mg/cm² of natural Ca sandwiched between 0.3 mg/cm² layers of Au. Two pairs of Si ΔE-E detector telescopes for detecting deuterons. Measured σ(E_d,θ), analyzing powers iT₁₁(θ). Deduced levels, J^π for the g.s. and first 2⁺ level.

2011Mi02: E=21 MeV. Measured Eγ, Iγ, γγ, lifetime of first 3⁻ level by recoil-distance Doppler shift method at IFIN-HH facility using eight HPGe detectors arranged at 145° and 35° together with an array of five LaBr₃ detectors. The γγ coin data analyzed with the differential decay curve method. Complete details of this study are not yet available.

Target ⁴⁰Ca J^π=0⁺ leading to ⁴⁴Ti J^π=L in this transfer reaction.

All γ-ray data and the level scheme are from [2011Mi02](#).

⁴⁴Ti Levels

E(level)	J ^π †	T _{1/2}	L†	Comments
0	0 ⁺		0	
1083	2 ⁺		2	
2454	4 ⁺			
3176	3 ⁻	≈21.6 ps		T _{1/2} : deduced by the evaluators from B(E3)(W.u.)≈3.0 (2011Mi02) and Adopted γ-branching ratios.
3646	4 ⁻			
4015	6 ⁺			
4061	5 ⁻			
5152	6 ⁻			
5671				

† From analyzing powers in [1999Ve11](#).

γ(⁴⁴Ti)

E _γ	E _i (level)	J _i ^π	E _f	J _f ^π	Comments
415	4061	5 ⁻	3646	4 ⁻	
470	3646	4 ⁻	3176	3 ⁻	
721	3176	3 ⁻	2454	4 ⁺	
885	4061	5 ⁻	3176	3 ⁻	
1083	1083	2 ⁺	0	0 ⁺	
1090	5152	6 ⁻	4061	5 ⁻	
1371	2454	4 ⁺	1083	2 ⁺	
1506	5152	6 ⁻	3646	4 ⁻	
1561	4015	6 ⁺	2454	4 ⁺	
1606	4061	5 ⁻	2454	4 ⁺	
1610	5671		4061	5 ⁻	
2093	3176	3 ⁻	1083	2 ⁺	
3176	3176	3 ⁻	0	0 ⁺	B(E3)(W.u.)≈3 (2011Mi02) B(E3) value is preliminary, obtained from the recoil-distance method for 2093-keV γ ray (2011Mi02) and branching for 3176γ 2.0% 3 quoted from 2000UrZX .

${}^{40}\text{Ca}(\text{pol } {}^6\text{Li},\text{D}),({}^6\text{Li},\text{pn}\gamma)$ 1999Ve11,2011Mi02

Level Scheme

