^{44}Ca(^{7}Li,p2nγ) 1976Fo22

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

1976Fo22: E=10-35 MeV ^{7}Li beam was produced from the MP-Tandem Van der Graaff generator of the Munich Universities. Targets were 500 to 1000 μg/cm^2 metallic ^{44}Ca (about 95% enriched) on Au backings. γ rays were detected with Ge(Li) detectors. Measured Eγ, Iγ, $\gamma\gamma$-coin, $\gamma(\theta)$, excitation functions. Deduced levels, J, π. Comparisons with theoretical calculations. 1976Fo22 also report data in ^{27}Al(^{24}Mg,3pγ) and ^{48}Ca(^{3}He,3nγ).

Level scheme including placements of γ transitions is from that of 1976Fo22.

^{48}Ti Levels

E(level)[†]	J$^\pi$[‡]
0.0	0$^+$
983.7 *5*	2$^+$
2296.2 *9*	4$^+$
3333.9 *10*	6$^+$
3509.6 *11*	6$^+$
4565.7 *11*	(8$^+$)
5198.5[#] *13*	8$^+$[#]
6104.6 *15*	(10$^+$)

[†] From a least-squares fit to γ-ray energies, assuming $\Delta E\gamma$=1 keV where not given.

[‡] From 1976Fo22, based on $\gamma(\theta)$ and reaction mechanism dependent arguments which are in common use in other mass regions but not yet well established for f-p shell residues. Arguments hinge basically on the assumption that the dominant decay follows the yrast states, so that strong transitions satisfy $J_i > J_f$. Evaporation model implying Gaussian magnetic substate population is employed in $\gamma(\theta)$ analysis. The validity of these assumptions is discussed critically by the authors.

[#] From (α,pγ) data of 1979Gl07. Existence of state and spin and parity assignment confirmed by selective nature of ^{35}S+^{14}C reaction (1986Wa19).

γ(^{48}Ti)

E$_\gamma$[†]	I$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
175.9 *5*	[&]	3509.6	6$^+$	3333.9	6$^+$	
632.7[#@] *10*		5198.5	8$^+$	4565.7	(8$^+$)	
983.7 *5*	100	983.7	2$^+$	0.0	0$^+$	A$_2$=+0.286 *22*, A$_4$=−0.065 *26*.
1037.9 *5*	62.0 *20*	3333.9	6$^+$	2296.2	4$^+$	A$_2$=+0.270 *22*, A$_4$=−0.046 *27*.
1056.2[@a] *10*		4565.7	(8$^+$)	3509.6	6$^+$	
1212.4 *10*	2.7 *4*	3509.6	6$^+$	2296.2	4$^+$	
1231.8 *5*	54 *4*	4565.7	(8$^+$)	3333.9	6$^+$	A$_2$=+0.268 *24*, A$_4$=−0.095 *30*.
1312.5 *7*	86 *3*	2296.2	4$^+$	983.7	2$^+$	A$_2$=+0.271 *23*, A$_4$=−0.050 *28*.
1538.8 *10*	10.8 *10*	6104.6	(10$^+$)	4565.7	(8$^+$)	A$_2$=+0.340 *44*, A$_4$=−0.143 *54*.
(1689[‡])		5198.5	8$^+$	3509.6	6$^+$	

[†] From 1976Fo22.

[‡] From (α,pγ) data of 1979Gl07 and placement confirmed by 1986Wa19 in ^{36}S(^{14}C,2nγ). Not seen in 1976Fo22.

[#] Originally placed as deexciting a 6737, (11$^+$,12$^+$), state by 1976Fo22. 1986Wa19 confirm placement from 5197 suggested by 1979Gl07 in (α,pγ).

[@] Weak.

[&] Interference from a transition in ^{45}Ca made reliable extraction of intensity impossible (1976Fo22).

[a] Placement of transition in the level scheme is uncertain.

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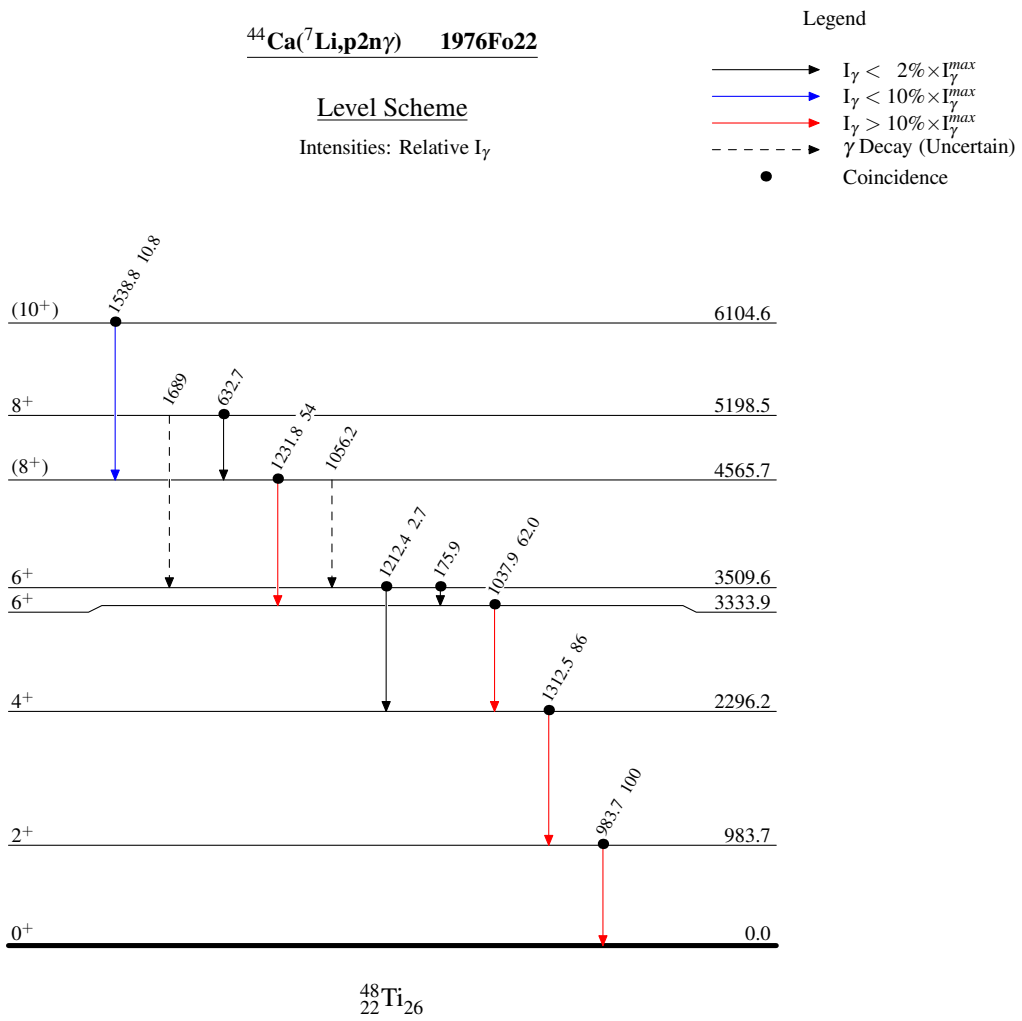
Level Scheme

Intensities: Relative I_γ



$^{48}_{22}Ti_{26}$