^{9}Be(^{48}Ca,2pγ) 2007Zh37

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	30-Apr-2022

2007Zh37: E(^{48}Ca)=172 MeV beam from ATLAS accelerator. Measured Eγ, Iγ, $\gamma\gamma$-coin using Gammasphere array with 101 Compton-suppressed HPGe detectors at ATLAS-ANL facility. Target thickness=1 mg/cm^2. Comparison with shell-model calculations in full *pf*-shell with the GXPF1A interaction.
Additional information 1.

^{55}Ti Levels

E(level)[†]	J$^\pi$[‡]	Comments
0.0[#]	(1/2$^-$)	Dominant configuration=[$\pi(f^2_{7/2})\otimes\nu(f^8_{7/2}, p^4_{3/2})]_{0+}\otimes\nu p^1_{1/2}$.
592.0[#] *5*	(5/2$^-$)	Dominant configuration=[$\pi(f^2_{7/2})\otimes\nu(f^8_{7/2},p^4_{3/2})]_{0+}\otimes\nu f^1_{5/2}$.
1796.0[#] *7*	(7/2$^-$)	Dominant configurations of 3p-3h state= $\pi f^2_{7/2}\otimes\nu(f^8_{7/2}p^3_{3/2}p^1_{1/2}f^1_{5/2})$ and $\pi f^2_{7/2}\otimes\nu(f^8_{7/2}p^4_{3/2}f^1_{5/2})$.
2147.0[#] *7*	(9/2$^-$)	Dominant configuration=$\pi f^2_{7/2}\otimes\nu[(f^8_{7/2}p^4_{3/2})_{4+}p^1_{1/2}]$.
2807.0[#] *9*	(13/2$^-$)	E(level): Dominant configuration=$\pi f^2_{7/2}\otimes\nu[(f^8_{7/2}p^4_{3/2})_{6+}p^1_{1/2}]$.
3582.0[#] *10*	(17/2$^-$)	Dominant configuration=$\pi f^2_{7/2}\otimes\nu[(f^8_{7/2}p^4_{3/2})_{6+}f^1_{5/2}]$.
5463.1[#] *11*	(19/2$^-$)	Dominant configuration= $\pi f^2_{7/2}\otimes\nu(f^8_{7/2}p^3_{3/2}p^1_{1/2}f^1_{5/2})$.

[†] From least-squares fit to Eγ data.
[‡] As proposed in 2007Zh37 based on assigned configurations from shell-model calculations, and yrast sequence.
[#] Seq.(A): Yrast sequence.

γ(^{55}Ti)

E$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
351.0 *5*	2147.0	(9/2$^-$)	1796.0	(7/2$^-$)
592.0 *5*	592.0	(5/2$^-$)	0.0	(1/2$^-$)
660.0 *5*	2807.0	(13/2$^-$)	2147.0	(9/2$^-$)
775.0 *5*	3582.0	(17/2$^-$)	2807.0	(13/2$^-$)
1204.0 *5*	1796.0	(7/2$^-$)	592.0	(5/2$^-$)
1555.0 *5*	2147.0	(9/2$^-$)	592.0	(5/2$^-$)
1881.0 *5*	5463.1	(19/2$^-$)	3582.0	(17/2$^-$)

[†] From level-scheme Fig. 3 in 2007Zh37. All the γ rays are shown in Fig. 3 as strong, except that 351γ and 1204γ are weak.

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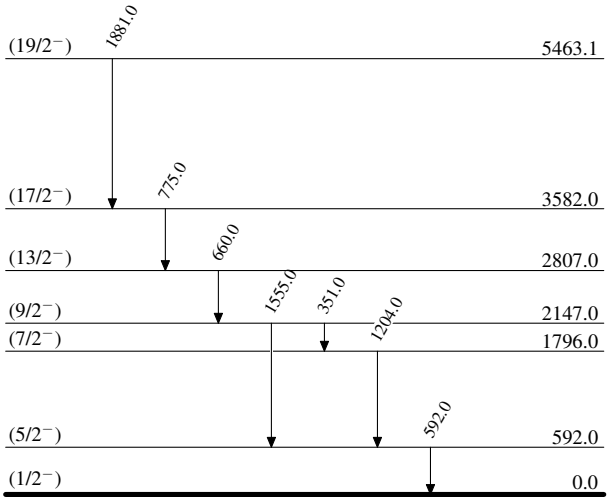
Level Scheme



$^{55}_{22}Ti_{33}$

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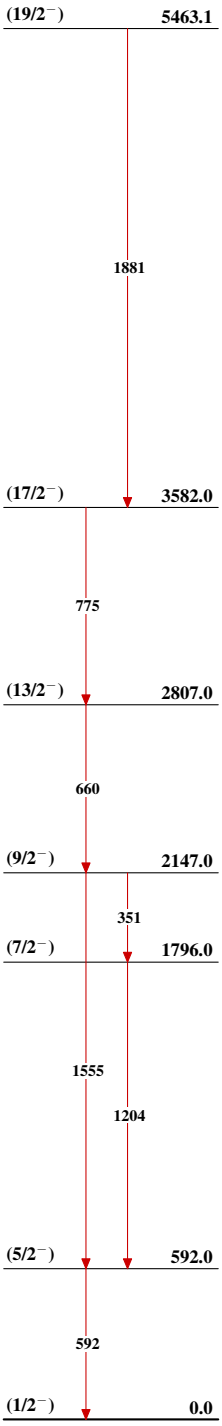
Seq.(A): Yrast sequence



$^{55}_{22}Ti_{33}$