^{9}Be(^{136}Xe,Xγ):isomer 2007Ho22

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	H. Iimura, J. Katakura, S. Ohya	NDS 180, 1 (2022)	1-Oct-2021

E=120 MeV/nucleon beam. Fragmentation of ^{136}Xe beam followed by separation of fragments separator. Time-of-flight measured with a plastic scintillator. Measured Eγ, Iγ, delayed γ, (fragment)γ correlated events using segmented germanium array. The Ge detectors were gated for 15 μs by a particle implantation trigger from Si detectors.

Others:2004Wa26,2007To23.

Decay scheme is that proposed by 2007Ho22. The feeding intensities at 1467 keV and 2758 keV exceed the decay intensities.

The lifetime of the isomer is unkown. It is in the microsecond range from observation of delayed γ rays.

^{126}Cd Levels

E(level)†	J$^{\pi}$‡	Comments
0.0	0^+	
652.4 *2*	(2^+)	
1467.2 *3*	(4^+)	
1868.6 *5*	(5^-)	
1950.7 *8*		J$^{\pi}$: 2007Ho22 proposed spin-parity of 7^-. Seniority-2, $\nu h_{11/2}\otimes\nu d_{3/2}$.
2323.7 *5*		J$^{\pi}$: 2007Ho22 proposed spin-parity of (6^+).
2729.1 *8*		J$^{\pi}$: 2007Ho22 proposed spin-parity of (8^+).
2757.7 *8*		J$^{\pi}$: 2007Ho22 proposed spin-parity of (9^-).
2977.4 *8*		J$^{\pi}$: 2007Ho22 proposed spin-parity of (10^+). Seniority-2, $\nu h^{-2}_{11/2}$.
2977.4+x		Isomer in the microsecond range from observation of delayed γ rays. J$^{\pi}$: 2007Ho22 proposed spin-parity of (12^+).

† From Eγ's.

‡ From Adopted Levels.

γ(^{126}Cd)

E$_\gamma$	I$_\gamma$†	E$_i$(level)	J$^{\pi}_i$	E$_f$	J$^{\pi}_f$
82.8‡		1950.7		1868.6	(5^-)
219.7 *2*	58 *15*	2977.4		2757.7	
248.2 *2*	14 *6*	2977.4		2729.1	
401.5 *4*	67 *19*	1868.6	(5^-)	1467.2	(4^+)
405.1 *7*	36 *14*	2729.1		2323.7	
652.4 *2*	100 *12*	652.4	(2^+)	0.0	0^+
807.0 *2*	28 *7*	2757.7		1950.7	
814.8 *2*	54 *11*	1467.2	(4^+)	652.4	(2^+)
856.4 *4*	36 *18*	2323.7		1467.2	(4^+)

† Relative prompt intensities normalized to Iγ(652.4γ)=100.

‡ From β-decay studies, not seen in this experiment.

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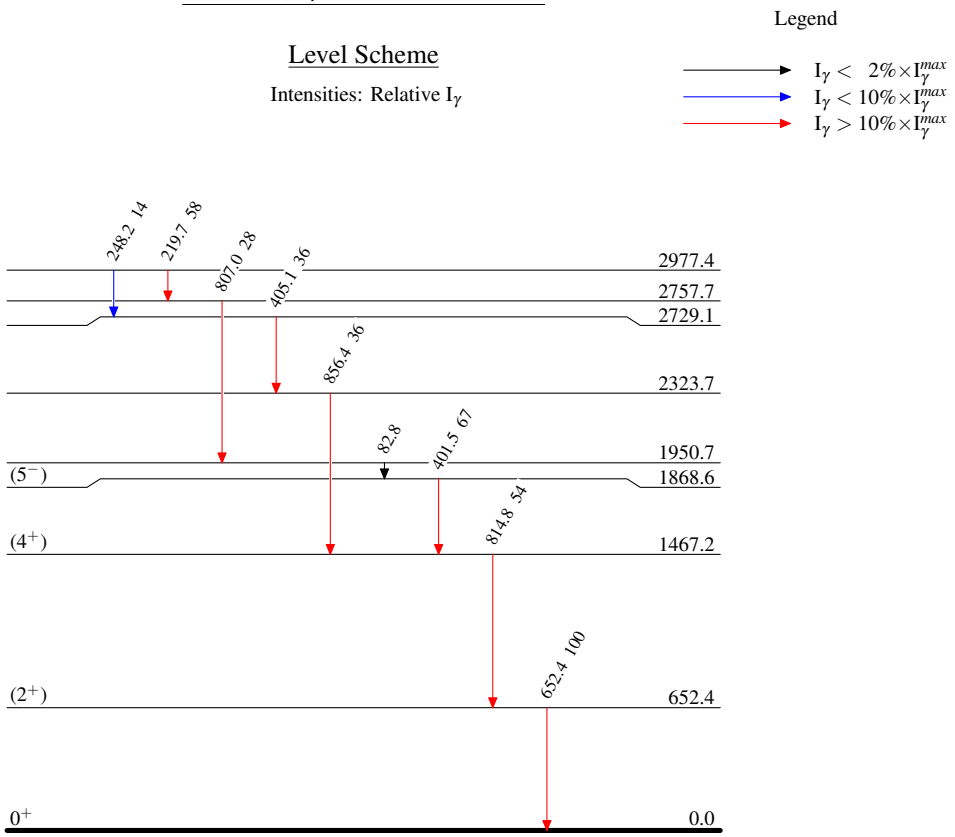
Level Scheme

Intensities: Relative I_γ



$^{126}_{48}Cd_{78}$