^{9}Be(^{238}U,Fγ) 2013Wa24

History

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

2013Wa24: E=345 MeV/nucleon $^{238}U^{86+}$ beam incident on ^{9}Be target of 3 mm thickness. Identification of fission fragments was done by ΔE-tof-Bρ method using BigRIPS and ZeroDegree spectrometers at RIKEN. Separated fragments were deposited in highly segmented stopper WAS3ABi consisting of an array of eight DSSSDs, each segmented into 60 and 40 strips on horizontal and vertical dimensions. Besides, particle detection, this array also detected β rays and conversion electrons. Gamma rays were detected by EURICA spectrometer consisting of 12 Cluster HPGe detectors. Measured Eγ, Iγ, (^{126}Pd)γ(t), γγ-coin, βγ-coin, isomer half-lives by delayed coincidence method. Deduced levels, J, π, isomer half-lives. Discussed shell structure near N=82.

^{126}Pd Levels

E(level)†	J$^{\pi}$	T$_{1/2}$	Comments
0.0	0$^+$		
693.3 *5*	(2$^+$)		
1481.0 *7*	(4$^+$)		
2023.5 *7*	(5$^-$)	0.33 μs *4*	%IT=100 T$_{1/2}$: from time difference between the 86-keV transition and the γ rays below the 2023 keV level (2013Wa24).
2109.7 *9*	(7$^-$)	0.44 μs *3*	%IT=100 T$_{1/2}$: from 86γ(t) relative to the beam implantation (2013Wa24).

† From a least-squares fit to the Eγ data. The evaluators have assigned an uncertaity of 0.5 keV for each γ ray.

γ(^{126}Pd)

E$_{\gamma}$†	I$_{\gamma}$	E$_i$(level)	J$_i^{\pi}$	E$_f$	J$_f^{\pi}$	Mult.	α‡	Comments
86.2	21 *2*	2109.7	(7$^-$)	2023.5	(5$^-$)	[E2]	2.37 *6*	α: The uncertainty includes an uncertainty in Eγ of 0.5 keV assigned by the evaluators.
542.4	52 *3*	2023.5	(5$^-$)	1481.0	(4$^+$)	[E1]		
693.3	100 *5*	693.3	(2$^+$)	0.0	0$^+$			
787.7	57 *4*	1481.0	(4$^+$)	693.3	(2$^+$)			
1330.2	40 *3*	2023.5	(5$^-$)	693.3	(2$^+$)	[E3]		

† No uncertainties are given by the authors.

‡ Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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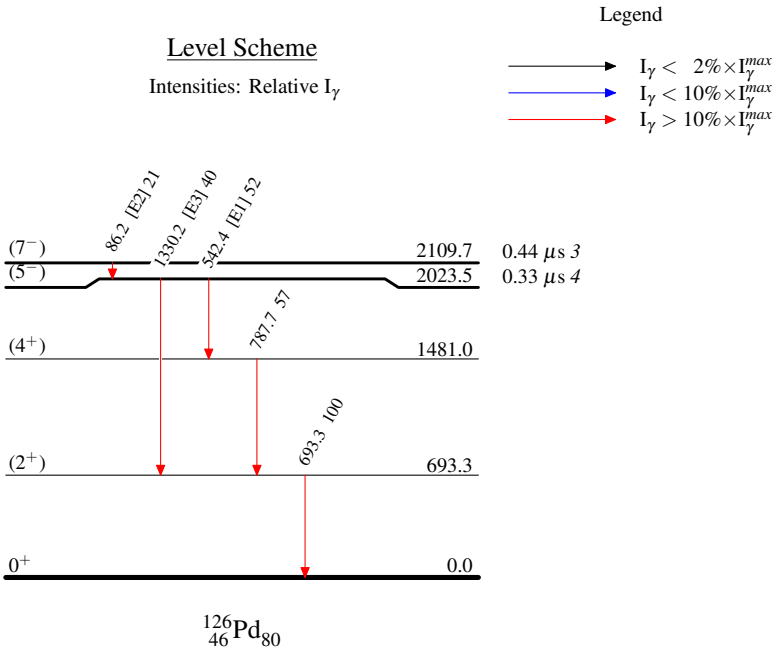
Level Scheme

Intensities: Relative I_γ



$^{126}_{46}Pd_{80}$