^{176}Yb(^{37}Cl,4nγ) 2006Me03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. Chen # and F. G. Kondev	NDS 126, 373 (2015)	30-Sep-2013

2006Me03: E=173, 179, 185 MeV ^{37}Cl beams were produced at the Wright Nuclear Structure Laboratory at Yale University. A target of 1 mg/cm^2 ^{176}Yb foil was used. Evaporation residues were separated by the Small Angle Separator System at Yale for Evaporation Residues (SASSYER) and γ-rays were detected by an array of six Compton-suppressed clover HPGe detectors each with about 150% relative efficiency. Measured Eγ, Iγ, $\gamma(\theta)$, $\gamma\gamma$-coin, γ(t), excitation functions. Deduced levels, J$^\pi$, configurations, isomer $T_{1/2}$.

^{209}Fr Levels

2006Me03 has misassigned the γ-ray transitions of ^{208}Fr to ^{209}Fr, and the ones of ^{209}Fr to ^{210}Fr. Therefore, the reported level scheme of ^{209}Fr in 2006Me03 is incorrect. In fact, it is that of ^{208}Fr. No $\gamma\gamma$-coincidences were measured in 2006Me03 and thus the level schemes can not be firmly established.

E(level)	$T_{1/2}$	Comments
x		
x+433.5	0.36 ms *14*	$T_{1/2}$: from 433.5γ(t) (2006Me03).

$\gamma(^{209}Fr)$

E_γ †	I_γ ‡	E_i(level)	E_f
[x]202.1 *4*	0.5 *1*		
[x]231.4 *4*	0.4 *1*		
[x]247.4 *4*	0.6 *1*		
[x]408.8 *4*	1.1 *1*		
433.5 *4*	1.0 *1*	x+433.5	x
[x]515.2 *4*	1.1 *2*		
[x]619.5 *5*	1.1 *3*		
[x]690.9 *4*	1.3 *1*		

† assigned to ^{210}Fr in 2006Me03, but associated with ^{209}Fr, as reported in 2009Dr04. Since no $\gamma\gamma$-coincidences were measured, the placements of these γ-ray transitions in the level scheme can not be established based on the 2006Me03 data alone.

‡ Relative intensities normalized to I(433.5γ)=1.0.

[x] γ ray not placed in level scheme.

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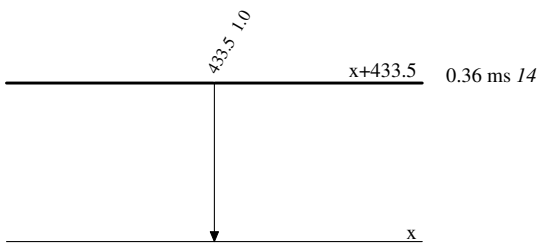
Level Scheme

Intensities: Relative I_γ



$^{209}_{87}Fr_{122}$