^{40}Ca(μ^-,$\nu\alpha\gamma$) 2006Me08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Ninel Nica, John Cameron and Balraj Singh	NDS 113, 1 (2012)	31-Dec-2011

The μ^- beam obtained from decay of π^- beam at 90 MeV/c. Measured Iγ, $\gamma\gamma$, γ-p using two HPGe detectors at TRIUMF facility. According to 2006Me08 ^{36}Cl is also reached by the background reaction ^{35}Cl(n,γ) the contribution of which was subtracted from the ^{40}Ca(μ^-,$\nu\alpha\gamma$) reaction.

Muonic Lyman series for natural Calcium

μ x ray	Energy	Intensity in percent
2p-1s	783.659 *25*	83.8 *10*
3p-1s	940.63 *10*	6.2 *2*
4p-1s	995.48 *10*	2.0 *1*
5p-1s	1020.81 *10*	2.0 *1*
6p-1s	1034.62 *10*	1.8 *1*
7p-1s	1042.71 *20*	1.4 *1*
(8-∞)p-1s	1046-1063	2.8 *4*

Muonic Balmer series for natural Calcium

μ x ray	Energy	Intensity in percent
3d-2p	157.35 *13*	64.5 *9*
4d-2p	212.03 *10*	8.85 *20*
5d-2p	237.31 *10*	4.34 *20*
6d-2p	251.06 *10*	3.29 *20*
7d-2p	259.45 *10*	1.37 *20*
(8-∞)d-2p	261-277	1.4 *3*

^{36}Cl Levels

E(level)†	J$^\pi$†
0.0	2^+
788.43	3^+
1164.88	1^+
1601.10	1^+
1951.19	2^-
1959.39	2^+
2863.93	$(3)^+$

† 2006Me08 list values from a database replaced by evaluators with those from Adopted Levels, Gammas dataset for ^{36}Cl (for E(level) rounded-off values were taken).

^{40}Ca(μ^-,$\nu\alpha\gamma$) 2006Me08 (continued)

$\gamma(^{36}Cl)$

E_γ †	Percent γ-ray yield	E_i(level)	J_i^π	E_f	J_f^π	Comments
436.22	0.1 *1*	1601.10	1^+	1164.88	1^+	
786.30	<2	1951.19	2^-	1164.88	1^+	
788.42	<2	788.43	3^+	0.0	2^+	
1164.86	0.4 *4*	1164.88	1^+	0.0	2^+	
1601.07	0.1 *2*	1601.10	1^+	0.0	2^+	
1951.13	0.1 *2*	1951.19	2^-	0.0	2^+	Percent γ-ray yield: −0.1 *2* in table XVI of 2006Me08 is probably a typographical error.
1959.34	0.1 *2*	1959.39	2^+	0.0	2^+	
2863.81	<0.3	2863.93	$(3)^+$	0.0	2^+	

† 2006Me08 list values from a database replaced by evaluators with rounded-off values from Adopted Levels, Gammas dataset for ^{36}Cl.

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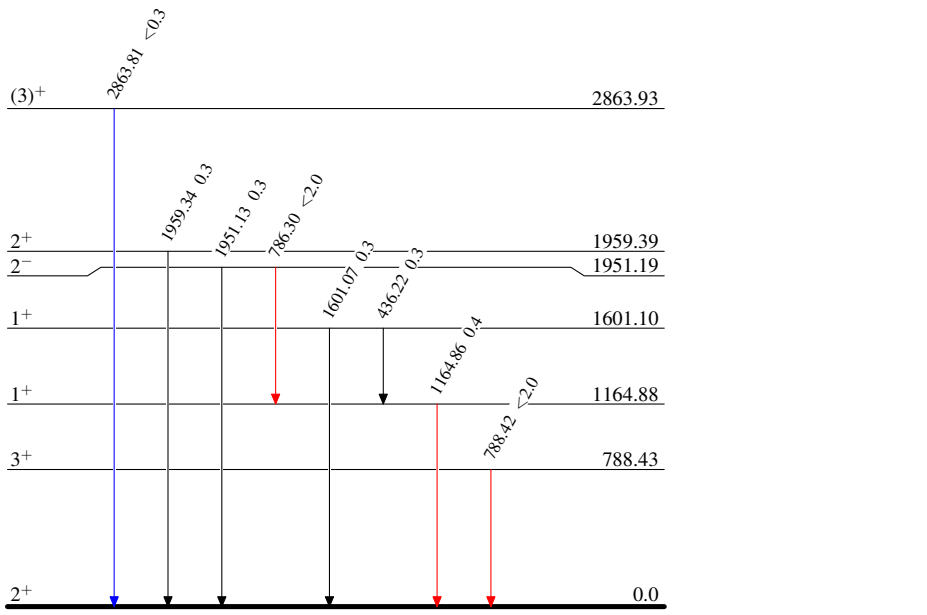
Level Scheme

Intensities: Percent γ-ray yield per muon capture



$^{36}_{17}Cl_{19}$