^{119}Xe ε decay 1976Be61

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	D. M. Symochko, E. Browne, J. K. Tuli	NDS 110,2945 (2009)	1-Dec-2008

Parent: ^{119}Xe: E=0.0; $J^\pi=(5/2^+)$; $T_{1/2}$=5.8 min *3*; Q(ε)=4.97×10^3 *3*; %ε+%β^+ decay=100.0

Additional information 1.

1976Be61: mass separated ^{119}Xe sources produced by 1-GeV p on tin; semi γ rays. Others: 1969Ha03, 1965An05 mass separated source, measured β^+,γ rays, ce/γ: see 1975PeZG.

β-strength function: (Σ I(β^+))/(Σ Iγ)=18 *6* measured total absorption γ spectra, scin. (1975Ho03).

Decay scheme proposed that by 1976Be61, except for the level at 536.5 keV.

^{119}I Levels

E(level)[†]	J^π[#]	$T_{1/2}$[#]
0.0	$5/2^+$	19.1 min *4*
90.9 *5*	(3/2,5/2,7/2)	
99.6 *4*	$7/2^+$	
232.5 *4*	$3/2^+$	
307.9 *5*	$9/2^+$	
320.4 *4*	$(5/2^+)$	
461.0? *5*	$7/2^+$	
536.9[‡] *5*	$9/2^+$	
556.6 *6*	$(3/2^+,5/2,7/2)$	

† Deduced by evaluators from least-squares fit to γ-ray energies.
‡ Introduced by evaluators on the basis of (HI,xnγ) data.
# From Adopted Levels.

γ(^{119}I)

E_γ[‡]	I_γ[&]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
87.3 *6*	43 *3*	320.4	$(5/2^+)$	232.5	$3/2^+$				
91.0 *6*	16 *1*	90.9	(3/2,5/2,7/2)	0.0	$5/2^+$				
96.0 *6*	38 *3*	556.6	$(3/2^+,5/2,7/2)$	461.0?	$7/2^+$				
100.0 *6*	95 *6*	99.6	$7/2^+$	0.0	$5/2^+$	M1+E2	−0.20 *10*	0.79 *5*	α(K)=0.66 *3*; α(L)=0.098 *16*; α(M)=0.020 *4*; α(N+..)=0.0044 *8* α(N)=0.0040 *7*; α(O)=0.00045 *6*
141.7 *6*	11 *2*	232.5	$3/2^+$	90.9	(3/2,5/2,7/2)				
[x]146.6 *6*	8 *1*								
208.2 *6*	60 *5*	307.9	$9/2^+$	99.6	$7/2^+$	M1+E2	−0.16 *10*	0.0990 *22*	α(K)=0.0851 *17*; α(L)=0.0111 *5*; α(M)=0.00225 *10*; α(N+..)=0.000507 *20* α(N)=0.000454 *18*; α(O)=5.30×10^{-5} *17*
220.8[@] *6*	≈3	320.4	$(5/2^+)$	99.6	$7/2^+$				
231.8 *6*	100	232.5	$3/2^+$	0.0	$5/2^+$				
235.7 *6*	10 *2*	556.6	$(3/2^+,5/2,7/2)$	320.4	$(5/2^+)$				
[x]277.7 *6*	≈3								
[x]294.8 *6*	8 *1*								

Continued on next page (footnotes at end of table)

^{119}Xe ε decay 1976Be61 (continued)

γ(^{119}I) (continued)

E_γ ‡	I_γ &	E_i(level)	J_i^π	E_f	J_f^π	Mult.#	δ#	α†	Comments
308.0 *6*	11 *2*	307.9	9/2$^+$	0.0	5/2$^+$	E2		0.0369	α(K)=0.0306 *5*; α(L)=0.00504 *8*; α(M)=0.001032 *17*; α(N+..)=0.000227 *4* α(N)=0.000205 *4*; α(O)=2.20×10^{-5} *4*
320.5 *6*	12 *2*	320.4	(5/2$^+$)	0.0	5/2$^+$				
437.7@ *6*	13 *3*	536.9	9/2$^+$	99.6	7/2$^+$	M1+E2	−0.24 *8*	0.01416 *22*	α(K)=0.01222 *19*; α(L)=0.001549 *23*; α(M)=0.000311 *5*; α(N+..)=7.04×10^{-5} *11* α(N)=6.30×10^{-5} *10*; α(O)=7.40×10^{-6} *11*
461.5 *6*	91 *7*	461.0?	7/2$^+$	0.0	5/2$^+$				
536.5@ *6*	9 *2*	536.9	9/2$^+$	0.0	5/2$^+$	E2		0.00704 *10*	α=0.00704 *10*; α(K)=0.00600 *9*; α(L)=0.000841 *12*; α(M)=0.0001701 *25*; α(N+..)=3.79×10^{-5} *6* α(N)=3.41×10^{-5} *5*; α(O)=3.85×10^{-6} *6*
x693.0 *6*	12 *3*								
x737.0 *6*	*a*								

† Additional information 2.
‡ From 1976Be61.
# From (HI,xnγ).
@ Unplaced in 1976Be61, placed by evaluators on the basis of (HI,xnγ) data.
& Relative to I(232γ)=100.
a Weak (1976Be61).
x γ ray not placed in level scheme.

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Decay Scheme

Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$