^{199}Bi IT decay (0.10 μs) 1974GiZX

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 108, 79 (2007)	15-Oct-2006

Parent: ^{199}Bi: E=1922.3+x; J^π=(25/2$^+$); $T_{1/2}$=0.10 μs *3*; %IT decay=100.0

^{191}Ir(^{12}C,4n) E=73-78 MeV, in-beam measurement, enriched target, semiconductor detector, γ(t), Eγ=0.05-2 MeV (1974GiZX).

^{199}Bi Levels

E(level)‡	J$^\pi$‡	$T_{1/2}$‡	Comments
0.0	9/2$^-$		
1002.2 *2*	13/2$^-$		
1501.8 *3*	17/2$^-$		
1647.5 *3*	17/2$^+$	34.1 ns *24*	
1922.3 *4*	(21/2$^+$)	<50 ns	
1922.3+x†	(25/2$^+$)	0.10 μs *3*	E(level): x<50.

† Transition from this level was not observed, suggesting Eγ<50 keV.
‡ From 'Adopted Levels'.

γ(^{199}Bi)

Iγ normalization: From Ti(1002.5γ)=100.
Placement and mult are from 'Adopted Levels, gammas'. Some of the γ placements and mult of 1974GiZX were not confirmed by later work by (HI,xnγ), and by 1985St02 In ^{199}Po ε decay.

Eγ	Iγ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.†	α#	Comments
x		1922.3+x	(25/2$^+$)	1922.3	(21/2$^+$)			
145.6 *2*	76 *3*	1647.5	17/2$^+$	1501.8	17/2$^-$	E1	0.177	α(K)=0.142; α(L)=0.0266; α(M)=0.00627; α(N+..)=0.00204
274.6 *2*	86 *6*	1922.3	(21/2$^+$)	1647.5	17/2$^+$	(E2)	0.160	α(K)=0.0818; α(L)=0.0580; α(M)=0.0150; α(N+..)=0.00497
x494.2 *5*	50.8							γ observed to decay with $T_{1/2}$≈25 ns by 1974GiZX; however, the 494.8 γ deexciting the 31/2$^-$ level (see (HI,xnγ)) decays with $T_{1/2}$<5 ns, and the 493.2 γ deexciting the 29/2$^-$ level (see (HI,xnγ)) decays with $T_{1/2}$=168 ns.
499.8 *3*	86 *9*	1501.8	17/2$^-$	1002.2	13/2$^-$	E2	0.0310	α(K)=0.0216; α(L)=0.00708; α(M)=0.00177; α(N+..)=0.000586
1002.5 *10*	100 *5*	1002.2	13/2$^-$	0.0	9/2$^-$	E2	0.0070	α(K)=0.00557; α(L)=0.00111

† From 'Adopted Gammas'.
‡ Absolute intensity per 100 decays.
# 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.
x γ ray not placed in level scheme.

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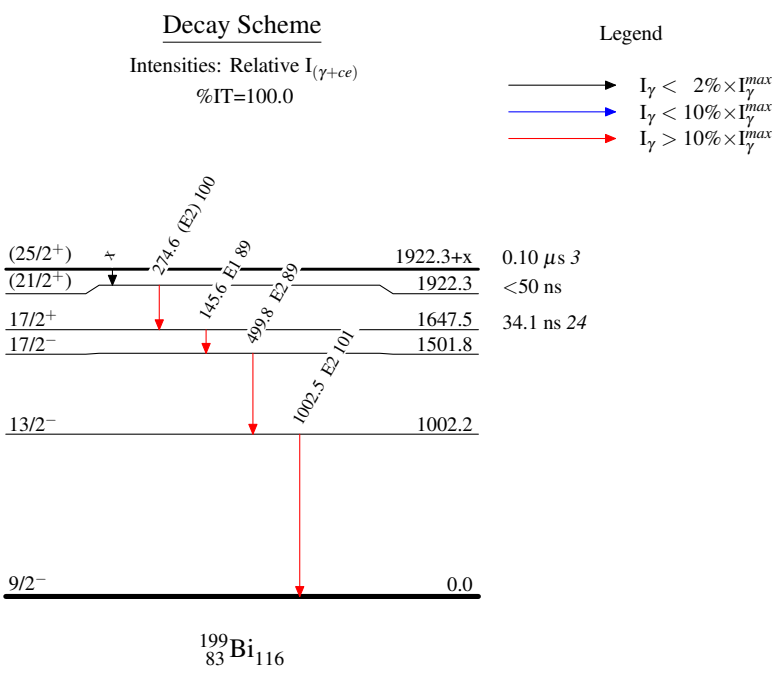
Decay Scheme

Intensities: Relative $I_{(\gamma+ce)}$

%IT=100.0



$^{199}_{83}Bi_{116}$