^{59}Cr IT decay (96 μs) 1998Gr14,1999So20

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 151, 1 (2018)	1-Apr-2018

Parent: ^{59}Cr: E=502.7 *11*; $J^{\pi}=(9/2^{+})$; $T_{1/2}$=96 μs *20*; %IT decay=100.0

1998Gr14: Ni(^{86}Kr,X), E(^{86}Kr)=60.3 MeV/nucleon, natural Ni target; 6 planar Si detectors, 5 HPGe detectors (including a low energy photon spectrometer), Alpha and LISE3 spectrometers; tof (118 min flight path); measured A, Z and charge state of each heavy ion, Eγ, $\gamma\gamma$ coin, γ(t).

1999So20: source from ^{58}Ni(^{86}Kr,X), E(^{86}Kr)=60.4 MeV/nucleon; doubly achromatic spectrometer LISE3; measured B(t), Eγ.

^{59}Cr Levels

E(level)†	J^{π}†	$T_{1/2}$	Comments
0.0	$(1/2^{-})$	0.74 s *28*	$T_{1/2}$: from Adopted Levels.
207.4 *3*	$(3/2^{-})$		
309.7 *4*	$(5/2^{-})$		
502.7 *11*	$(9/2^{+})$	96 μs *20*	%IT=100 $T_{1/2}$: from 1998Gr14.

† From Adopted Levels.

γ(^{59}Cr)

Eγ†	E$_i$(level)	J_i^{π}	E$_f$	J_f^{π}	Mult.	Comments
102 *1*	309.7	$(5/2^{-})$	207.4	$(3/2^{-})$		
193 *1*	502.7	$(9/2^{+})$	309.7	$(5/2^{-})$	[M2]	Mult.: RUL eliminates E3, M3 and higher multipolarities; M2 favored by analogy with isomeric states in neighboring nuclides. 1999So20 conclude that the 193γ is the isomeric transition rather than the 208γ (suggested in 1998Gr14) because the 208γ and 102γ are present in ^{59}V β^{-} decay but the 193γ is not.
208 *1*	207.4	$(3/2^{-})$	0.0	$(1/2^{-})$		Placed differently in 1998Gr14; see comment on 193γ.

† From 1999So20. Same value in 1998Gr14 without uncertainties.

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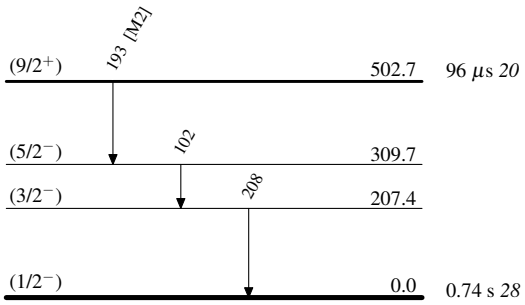
Decay Scheme

%IT=100.0



$^{59}_{24}Cr_{35}$