Coulomb excitation　　1972St16

History

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

^{119}Sn$(\alpha,\alpha'\gamma)$, E=10-11 MeV; ^{119}Sn$(^{16}$O,^{16}O$\gamma)$, E=45 MeV; 83.5% enriched target; semi measured γ, $\gamma(\theta)$, θ=0°, 90°; DSA.

^{119}Sn Levels

E(level)	$J^{\pi\dagger}$	$T_{1/2}$	Comments
0	$1/2^+$		
23.9 6	$3/2^+$		
920.5 8	$3/2^+$	1.6 ps 5	J^π: $\gamma(\theta)$ for composite 921γ is for the 920.5 and 921.4 levels, and $T_{1/2}$ from Doppler shift measurement for these levels are mutually consistent with J^π(920.5)=3/2$^+$, and J^π(921.4)=5/2$^+$, but not with J^π(921.4)=3/2$^+$ and J^π(920.5)=5/2$^+$, or with J^π=3/2$^+$ or 5/2$^+$ for both states.
921.4 8	$5/2^+$	1.2 ps 4	J^π: see 920.5 level. E(level): E(921.4 level)-E(920.5 level)=0.85 7 (1972St16).
1090.0 8	$5/2^+$	0.21 ps 7	J^π: $\gamma(\theta)$ consistent with J=5/2, but 3/2 cannot be ruled out.
1188?	$3/2^+,5/2^+$		B(E2)↑<0.0006
1354.0 8	$5/2^+$	0.42 ps 14	J^π: $\gamma(\theta)$ consistent with 5/2 but not with 3/2.
1574?	$1/2,3/2,5/2^+$		B(E2)↑<0.002

† From Adopted Levels. Values deduced from $\gamma(\theta)$ in this experiment are given in comments.

$\gamma(^{119}$Sn)

E_i(level)	J_i^π	E_γ	$I_\gamma^\dagger$	E_f	J_f^π	Mult.‡	$\delta^\ddagger$
23.9	$3/2^+$	23.9		0	$1/2^+$		
920.5	$3/2^+$	896.6	26 5	23.9	$3/2^+$	(M1)	
		920.5	74 5	0	$1/2^+$	E2+M1	$-10 +2-5$
921.4	$5/2^+$	897.5	75 5	23.9	$3/2^+$	E2(+M1)	
		921.4	25 5	0	$1/2^+$	E2	
1090.0	$5/2^+$	1066	94.1 4	23.9	$3/2^+$	M1+E2	$+0.26$ 3
		1090	5.9 4	0	$1/2^+$		
1354.0	$5/2^+$	1330	76 1	23.9	$3/2^+$	E2+M1	-0.31 3
		1354	24 1	0	$1/2^+$		

† Relative photon branching (1972St16).
‡ From Adopted Levels.

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Level Scheme

Intensities: % photon branching from each level

$^{119}_{50}\text{Sn}_{69}$