^{118}Sn(α,2nγ) 1982Va10,1973Wy01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	K. Kitao, Y. Tendow and A. Hashizume	NDS 96, 241 (2002)	1-Dec-2001

1982Va10: E=22-33 MeV, measured γ, $\gamma\gamma$(t), $\gamma(\theta)$, Ice(K), γ-ray linear polarization, excit.
1970Wa13: E=26-31 MeV, measured γ, γ(t), $\gamma(\theta)$. 1970Wa13 also reported Iγ from (α,4nγ) at E=52-61 MeV.
1973Wy01: measured I(ce(K)), deduced K-conversion coefficients.
Other: 1969Be04, 2000Ha65.
E(level)(0.0,560.4,1161.5,1776.2,2652.9,3543.5,4459.7 levels): g.s. ΔJ=2 band.

^{120}Te Levels

E(level)†	J$^\pi$‡	E(level)†	J$^\pi$‡	E(level)†	J$^\pi$‡	E(level)†	J$^\pi$‡
0.0	0$^+$	2201.48 *5*	6$^+$	3130.83 *9*	9$^+$	4086.38 *9*	11$^-$
560.437 *20*	2$^+$	2461.36 *11*	5$^-$	3142.17 *7*	8$^-$	4092.91 *9*	12$^+$
1103.21 *20*	(0$^+$)	2519.89 *6*	6$^+$	3364.30 *7*	10$^+$	4459.78 *13*	12$^+$
1161.55 *3*	4$^+$	2652.96 *6*	8$^+$	3374.19 *8*	9$^-$	4503.25 *11*	(12$^-$)
1201.28 *5*	2$^+$	2835.32 *9*	8$^+$	3399.73 *8*	9$^-$	4815.3	(13$^-$)
1535.08 *9*	(2$^+$)	2877.62 *13*	6$^-$	3487.40 *10*	10$^+$	4818.71 *13*	(14$^+$)
1776.22 *5*	6$^+$	2899.19 *7*	7$^-$	3543.58 *9*	10$^+$	5345.11 *16*	(14,16)$^+$
1815.10 *6*	4$^+$	2940.28 *7*	7$^+$	3567.26 *12*			
1863.34 *10*	(3)$^+$	3030.54 *7*	7$^-$	3813.60 *9*	10$^-$		
1924.39 *6*	2$^+$	3039.26 *7*	8$^+$	3881.48 *12*	11$^+$		

† From a least-squares fit to E(γ's) by the evaluators.
‡ Based on $\gamma(\theta)$, γ-ray linear pol from ^{118}Sn(α,2nγ), γ mult and excit.

γ(^{120}Te)

All γ rays decay with $T_{1/2}$<3 ns.
α(K)exp from 1982Va10, values are renormalized to α(K)(E2)=0.00509 for 560γ (evaluators).

E_γ[†]	I_γ[†&]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[a]	δ[†]	α[e]	Comments
111.63 *3*	1.75 *7*	3142.17	8⁻	3030.54	7⁻	D+Q[c]	0.20 *+9−7*		
201.89 *3*	0.77 *4*	3142.17	8⁻	2940.28	7⁺	D+Q[c]	−0.09 *+9−4*		
242.97 *3*	1.35 *5*	3142.17	8⁻	2899.19	7⁻	M1+E2[b]	1.0 *2*	0.069 *2*	
295.51 *3*	2.39 *9*	3130.83	9⁺	2835.32	8⁺	M1+E2[b]	+0.25 *+6−2*	0.0362 *1*	
325.04 *3*	6.4 *2*	3364.30	10⁺	3039.26	8⁺	E2[b]		0.0299	
356.56 *4*	1.50 *4*	3487.40	10⁺	3130.83	9⁺	M1+E2[b]	+0.29 *+14−8*	0.0221	
394.08 *7*	0.57 *4*	3881.48	11⁺	3487.40	10⁺	M1+E2[b]	+0.40 *+38−20*	0.0170 *2*	
416.26 *7*	1.33 *7*	2877.62	6⁻	2461.36	5⁻	M1+E2[b]	−0.25 *+8−9*	0.0148	
425.23 *3*	7.0 *2*	2201.48	6⁺	1776.22	6⁺	M1+E2[b]	+0.14 *+5−7*	0.0141	
526.40 *9*	0.7 *2*	5345.11	(14,16)⁺	4818.71	(14⁺)				
542.8		1103.21	(0⁺)	560.437	2⁺				I_γ: intensity was not given by authors.
542.82 *8*	0.55 *10*	4086.38	11⁻	3543.58	10⁺	D[c]			
560.44 *2*	100	560.437	2⁺	0.0	0⁺	[E2]		0.00601	α=0.00601; α(K)=0.00509; α(L)=0.00070 α(K)exp: 0.0055 *4* given by authors.
601.11 *2*	94 *2*	1161.55	4⁺	560.437	2⁺	E2		0.00499	α(K)exp=0.0038 *3* α=0.00499; α(K)=0.00423; α(L)=0.00057
613.8[‡#] *4*	1.0 *3*	1815.10	4⁺	1201.28	2⁺	(E2)		0.00472	α(K)exp=0.0035 *3* α=0.00472; α(K)=0.00400; α(L)=0.00054
614.62[‡#] *4*	67 *2*	1776.22	6⁺	1161.55	4⁺	(E2)		0.00470	α(K)exp=0.0035 *3* α=0.00470; α(K)=0.00399; α(L)=0.00054
640.85 *5*	3.7 *2*	1201.28	2⁺	560.437	2⁺	M1+E2[b]	−0.92 *9*		
653.54 *5*	1.15 *7*	1815.10	4⁺	1161.55	4⁺	M1+E2[d]	−0.56 *+28−37*	0.00478 *18*	α(K)exp=0.0041 *8* α=0.00478 *18*; α(K)=0.00410 *21*; α(L)=0.00051 *1*
662.0 *1*	0.97 *10*	1863.34	(3)⁺	1201.28	2⁺	D+Q[b]			
671.43 *5*	2.85 *9*	3813.60	10⁻	3142.17	8⁻	E2		0.00375	α(K)exp=0.0031 *5* α=0.00375; α(K)=0.00319; α(L)=0.00042
686.65 *5*	0.77 *7*	4086.38	11⁻	3399.73	9⁻	Q[c]			
689.65 *7*	0.78 *7*	4503.25	(12⁻)	3813.60	10⁻	Q[c]			
704.77 *7*	1.22 *8*	2519.89	6⁺	1815.10	4⁺	E2[b]			
711.3[‡@] *1*	1.3 *2*	3364.30	10⁺	2652.96	8⁺	E2		0.00324	α(K)exp=0.0020 *5* α=0.00324; α(K)=0.00276; α(L)=0.00036
712.0[‡@] *2*	1.2 *2*	4086.38	11⁻	3374.19	9⁻	E2			α(K)exp=0.0020 *5*
721.21 *6*	4.2 *1*	3374.19	9⁻	2652.96	8⁺	E1		0.00119	α(K)exp=0.0007 *2* α=0.00119; α(K)=0.00102; α(L)=0.00012
725.8 *1*	1.38 *9*	4818.71	(14⁺)	4092.91	12⁺	(E2)[c]			

γ(^{120}Te) (continued)

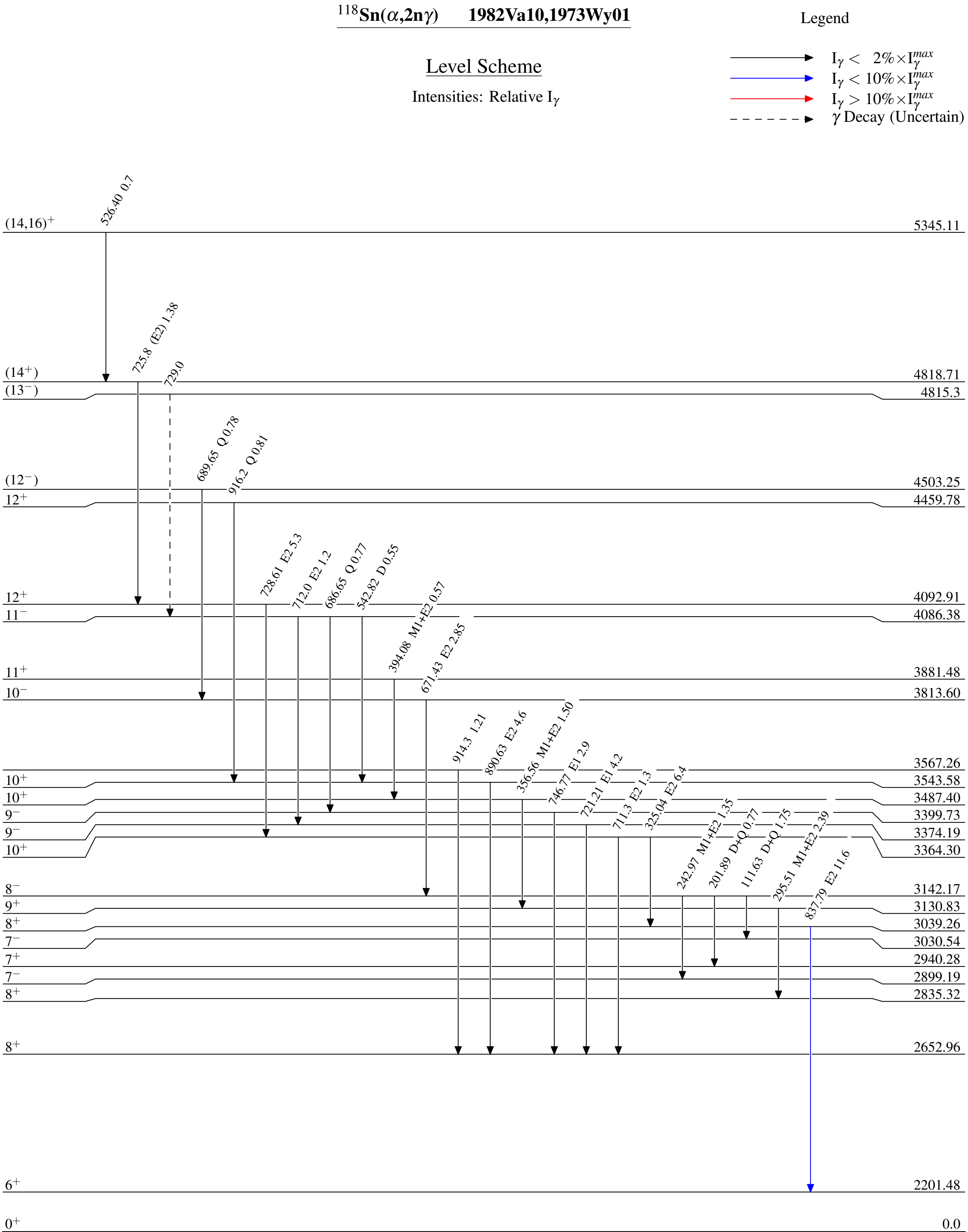
E_γ[†]	I_γ[†&]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[a]	δ[†]	α[e]	Comments
728.61 *5*	5.3 *2*	4092.91	12^+	3364.30	10^+	E2		0.00305	α(K)exp=0.0016 *5* α=0.00305; α(K)=0.00260; α(L)=0.00034
729.0[f]		4815.3	(13^-)	4086.38	11^-				E_γ: from authors′ drawing; no intensity was given by authors.
743.65 *6*	2.1 *1*	2519.89	6^+	1776.22	6^+	M1+E2	0.90 *20*	0.00334 *10*	α(K)exp=0.0029 *6* α=0.00334 *10*; α(K)=0.00286 *9*; α(L)=0.00036 *1*
746.77 *6*	2.9 *1*	3399.73	9^-	2652.96	8^+	E1		0.00110	α(K)exp=0.0008 *2* α=0.00110; α(K)=0.00095; α(L)=0.00011
762.80 *5*	1.17 *7*	1924.39	2^+	1161.55	4^+	E2		0.00342 *9*	α(K)exp=0.0025 *6* α=0.00342 *9*; α(K)=0.00294 *8*; α(L)=0.00036 *1* Mult.: authors given δ=−0.3 *2*.
837.79 *5*	11.6 *7*	3039.26	8^+	2201.48	6^+	E2		0.00218	α(K)exp=0.0014 *1* α=0.00218; α(K)=0.00186; α(L)=0.00024
876.73 *4*	25.9 *12*	2652.96	8^+	1776.22	6^+	E2		0.00196	α(K)exp=0.0015 *1* α=0.00196; α(K)=0.00168; α(L)=0.00021
890.63 *7*	4.6 *3*	3543.58	10^+	2652.96	8^+	E2		0.00189	α(K)exp=0.0015 *2* α=0.00189; α(K)=0.00162; α(L)=0.00021
914.3 *1*	1.21 *9*	3567.26		2652.96	8^+	[c]			
916.2 *1*	0.81 *7*	4459.78	12^+	3543.58	10^+	Q[c]			
974.64 *8*	0.43 *9*	1535.08	(2^+)	560.437	2^+	E0+M1+E2[d]			α(K)exp=0.0043 *6* δ: δ(M1+E2)≤−0.05.
1040.02 *6*	12.6 *6*	2201.48	6^+	1161.55	4^+	E2		0.00133	α(K)exp=0.0013 *1* α=0.00133; α(K)=0.00114; α(L)=0.00014
1059.10 *7*	3.4 *1*	2835.32	8^+	1776.22	6^+	E2		0.00128	α(K)exp=0.0014 *3* α=0.00128; α(K)=0.00110; α(L)=0.00014
1103.2 *2*		1103.21	(0^+)	0.0	0^+	(E0)			α(K)exp>0.0043 E_γ: no Iγ observed, assignment on the basis of conversion electron data.
1122.93 *8*	5.0 *3*	2899.19	7^-	1776.22	6^+	E1		0.00050	α(K)exp=0.00055 *9* α=0.00050; α(K)=0.00043
1164.05 *9*	3.7 *4*	2940.28	7^+	1776.22	6^+	M1+E2	−0.45 *+3−14*	0.00128 *1*	α(K)exp=0.0012 *2* α=0.00128 *1*; α(K)=0.00110 *2*; α(L)=0.00013
1201.2 *1*	1.0 *1*	1201.28	2^+	0.0	0^+	Q[c]			
1254.36 *9*	3.7 *3*	3030.54	7^-	1776.22	6^+	E1		0.00041	α(K)exp<0.00037 α=0.00041; α(K)=0.00035
1299.8 *1*	2.5 *2*	2461.36	5^-	1161.55	4^+	E1		0.00038	α(K)exp<0.00046 α=0.00038; α(K)=0.00033
1303.1 *2*	0.6 *2*	1863.34	$(3)^+$	560.437	2^+	(M1+E2)	0.17 *+15−16*		
1358.6 *2*	0.5 *2*	2519.89	6^+	1161.55	4^+	Q[c]			
1364.1 *1*	2.0 *2*	1924.39	2^+	560.437	2^+	M1(+E2)	−0.14 *+14−5*	0.00093 *1*	α(K)exp<0.0012 α=0.00093 *1*; α(K)=0.00080

From ENSDF

γ(^{120}Te) (continued)

[†] From 1982Va10.
[‡] Unresolved doublet. Intensities derived from coincidence data (1982Va10).
[#] α(K)exp given for 613.8γ+614.6γ.
[@] α(K)exp given for 711.3γ+712.0γ.
[&] Relative to I(560.44γ)=100, AtE(α)=28 MeV.
[a] From α(K)exp, γ(θ) and γ-ray linear pol (1982Va10), unless otherwise noted.
[b] From γ(θ) and γ-ray linear pol.
[c] From γ(θ).
[d] From γ(θ) and α(K)exp.
[e] 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.
[f] Placement of transition in the level scheme is uncertain.

$^{120}_{52}$Te$_{68}$-4



^{118}Sn(α,2nγ) 1982Va10,1973Wy01
Level Scheme
Intensities: Relative Iγ
Legend
Iγ < 2%×Iγmax
Iγ < 10%×Iγmax
Iγ > 10%×Iγmax
γ Decay (Uncertain)
(14,16)+ 5345.11
(14+) 4818.71
(13−) 4815.3
(12−) 4503.25
12+ 4459.78
12+ 4092.91
11− 4086.38
11+ 3881.48
10− 3813.60
3567.26
10+ 3543.58
10+ 3487.40
9− 3399.73
9− 3374.19
10+ 3364.30
8− 3142.17
9+ 3130.83
8+ 3039.26
7− 3030.54
7+ 2940.28
7− 2899.19
8+ 2835.32
8+ 2652.96
6+ 2201.48
0+ 0.0
526.40 0.7
725.8 (E2) 1.38
729.0
689.65 Q 0.78
916.2 Q 0.81
728.61 E2 5.3
712.0 E2 1.2
686.65 Q 0.77
542.82 D 0.55
394.08 M1+E2 0.57
671.43 E2 2.85
914.3 1.21
890.63 E2 4.6
356.56 M1+E2 1.50
746.77 E1 2.9
721.21 E1 4.2
711.3 E2 1.3
325.04 E2 6.4
242.97 M1+E2 1.35
201.89 D+Q 0.77
111.63 D+Q 1.75
295.51 M1+E2 2.39
837.79 E2 11.6

$^{120}_{52}Te_{68}$

^{118}Sn(α,2nγ) 1982Va10,1973Wy01

Level Scheme (continued)

Intensities: Relative I_γ