$^{128}Te(^{3}He,4n\gamma)$ 1981He04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	A. Hashizume	NDS 112, 1647 (2011)	1-Oct-2009

1981He04: $^{126}Te(^{3}He,2n\gamma)$ E=20-26 MeV, $^{128}Te(^{3}He,4n\gamma)$ E=27 MeV; γ, ce, $\gamma\gamma$ coin, γ(t), $\gamma(\theta)$, excitation function.

^{127}Xe Levels

E(level)†	J^{π}‡	$T_{1/2}$	Comments
0.0	$1/2^+$	36.346 d *3*	
124.66 *13*	$3/2^+$		
297.05 *21*	$9/2^-$	69.2 s *9*	
308.8 *3*	$(11/2^-)$		
321.43 *14*	$3/2^+$		
342.17 *21*	$7/2^+$	37 ns *3*	$T_{1/2}$: from γ(t).
375.39 *15*	$5/2^+$		
419.2 *3*	$5/2^-,7/2^-,9/2^-$		
509.96 *24*	$(3/2)^+$		
530.24 *18*	$7/2^+$		
587.16 *24*	$3/2^+$		
646.02 *23*	$(9/2)^+$		
711.55 *19*	$7/2^+$		
792.4 *3*	$(11/2^-,13/2^-)$		
804.72 *16*	$5/2^+$		
827.8 *4*	$(15/2^-)$		
897.47 *22*	$(9/2^+)$		
904.8 *4*	$1/2^+,3/2^+,5/2^+$		
938.2 *3*	$(11/2)^+$		
1021.3 *3*			
1080.56 *23*	$11/2^+$		
1282.6 *3*			
1369.3 *4*	$(13/2^-,15/2^-)$		
1466.1 *4*	$(13/2^-$ to $17/2^-)$		
1508.3 *4*	$(19/2^-)$		
1541.0 *3*	$(13/2^+)$		
1622.4 *4*	$(15/2^+)$		
1751.3 *3*	$15/2^+$		
1925.8 *4*			
2242.6 *5*	$(17/2^-,21/2^-)$		
2311.1 *5*	$(23/2^-)$		
2395.2 *4*	$(11/2^+,19/2^+)$		

† From a least-squares fit to E_{γ}'s.

‡ From Adopted Levels.

γ(^{127}Xe)

E_γ[†]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[b]	α[c]	Comments
11.8 *4*		308.8	(11/2$^-$)	297.05	9/2$^-$				E_γ: from (α,2nγ).
45.1 *2*	2.5 *8*	342.17	7/2$^+$	297.05	9/2$^-$	D			
77.0 *2*	3.7 *11*	419.2	5/2$^-$,7/2$^-$,9/2$^-$	342.17	7/2$^+$	D+Q			
124.7 *2*	100 *10*	124.66	3/2$^+$	0.0	1/2$^+$	M1+E2		0.63 *20*	α(K)exp=0.30 *10* α(K)=0.49 *11*; α(L)=0.12 *7*; α(M)=0.025 *15*; α(N+..)=0.005 *4* α(N)=0.005 *3*; α(O)=0.0005 *3*
154.8 *2*	1.0 *3*	530.24	7/2$^+$	375.39	5/2$^+$				
172.4 *2*	40 *4*	297.05	9/2$^-$	124.66	3/2$^+$	E3		1.627	α(K)exp=0.60 *20* α(K)=0.912 *14*; α(L)=0.564 *9*; α(M)=0.1238 *19*; α(N+..)=0.0269 *5* α(N)=0.0245 *4*; α(O)=0.00243 *4* Additional information 1.
183.1[#] *2*	0.5[#] *2*	1080.56	11/2$^+$	897.47	(9/2$^+$)				
196.8 *2*	3.0 *9*	321.43	3/2$^+$	124.66	3/2$^+$				
217.5 *2*	13.7 *14*	342.17	7/2$^+$	124.66	3/2$^+$	E2		0.1210	α(K)exp=0.081 *9* α(K)=0.0967 *14*; α(L)=0.0193 *3*; α(M)=0.00404 *6*; α(N+..)=0.000903 *13* α(N)=0.000813 *12*; α(O)=9.03×10^{-5} *13*
250.6[#] *2*	1.0[#] *3*	375.39	5/2$^+$	124.66	3/2$^+$				
292.2 *2*	0.4 *1*	938.2	(11/2)$^+$	646.02	(9/2)$^+$	D+Q			δ: −0.05 *+7−9* or −3 *+2−1*.
303.8 *2*	4.0 *12*	646.02	(9/2)$^+$	342.17	7/2$^+$	M1+E2		0.0398 *7*	α(K)exp=0.036 *7* α(K)=0.0335 *7*; α(L)=0.0050 *7*; α(M)=0.00102 *15*; α(N+..)=0.00023 *3* α(N)=0.00021 *3*; α(O)=2.51×10^{-5} *22*
321.5 *2*	6.5 *20*	321.43	3/2$^+$	0.0	1/2$^+$	M1+E2	−0.6 *+5−7*	0.0339 *6*	α(K)exp=0.030 *4* α(K)=0.0289 *7*; α(L)=0.0040 *4*; α(M)=0.00081 *7*; α(N+..)=0.000188 *15* α(N)=0.000167 *14*; α(O)=2.05×10^{-5} *10*
349.0 *2*	2.6 *8*	646.02	(9/2)$^+$	297.05	9/2$^-$	D			
367[#] *1*	0.3[#] *1*	897.47	(9/2$^+$)	530.24	7/2$^+$				
375.5 *2*	8.7 *9*	375.39	5/2$^+$	0.0	1/2$^+$	E2		0.0207	α(K)exp=0.018 *3* α(K)=0.01730 *25*; α(L)=0.00272 *4*; α(M)=0.000561 *8*; α(N+..)=0.0001276 *18* α(N)=0.0001142 *17*; α(O)=1.339×10^{-5} *19*
385.3 *2*	5.8 *17*	509.96	(3/2)$^+$	124.66	3/2$^+$	M1+E2		0.0203 *12*	α(K)exp=0.015 *3* α(K)=0.0172 *13*; α(L)=0.00243 *9*; α(M)=0.000495 *21*; α(N+..)=0.000114 *4* α(N)=0.000102 *4*; α(O)=1.235×10^{-5} *18* δ: 57 +∞−43 or 0.12 *12*.
390.0 *2*	1.6 *5*	711.55	7/2$^+$	321.43	3/2$^+$				
394.8 *2*	1.4 *4*	904.8	1/2$^+$,3/2$^+$,5/2$^+$	509.96	(3/2)$^+$				

γ(^{127}Xe) (continued)

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [&]	δ [b]	α [c]	Comments
405.6 2	10.6 11	530.24	7/2+	124.66	3/2+	E2		0.01642	α(K)exp=0.018 3 α(K)=0.01377 20; α(L)=0.00212 3; α(M)=0.000435 7; α(N+..)=9.92×10−5 14 α(N)=8.87×10−5 13; α(O)=1.047×10−5 15
462.5[#] 2	1.0[#] 3	587.16	3/2+	124.66	3/2+				
483.5[d] 2	16.6[d] 17	792.4	(11/2−,13/2−)	308.8	(11/2−)	D+Q[a]	−0.38 4		
483.5[d] 2	3.0[d#] 9	804.72	5/2+	321.43	3/2+	[a]			
491.1[#] 2	1.0[#] 3	1021.3		530.24	7/2+				
495.3 2	2.1 5	792.4	(11/2−,13/2−)	297.05	9/2−				
519.1 2	28 3	827.8	(15/2−)	308.8	(11/2−)	E2		0.00809 12	α(K)exp=0.010 2 α=0.00809 12; α(K)=0.00686 10; α(L)=0.000986 14; α(M)=0.000202 3; α(N+..)=4.62×10−5 7 α(N)=4.13×10−5 6; α(O)=4.96×10−6 7
522.1 2	4.8 14	897.47	(9/2+)	375.39	5/2+	Q			
550.3 2	4.0[#] 12	1080.56	11/2+	530.24	7/2+	(Q)			
556.5 2	0.8[#] 3	1925.8		1369.3	(13/2−,15/2−)	(D+Q)			
576.9 2	3.9 12	1369.3	(13/2−,15/2−)	792.4	(11/2−,13/2−)	D+Q	−0.8 +4−5		
587.0[@] 2	3.2 10	711.55	7/2+	124.66	3/2+				
596.1 2	7.6 8	938.2	(11/2)+	342.17	7/2+				
636.6 2	3.1 9	1282.6		646.02	(9/2)+	(Q)			
638.4 2	6.2 6	1466.1	(13/2− to 17/2−)	827.8	(15/2−)	D+Q	−0.16 9		
643.5[#] 2	1.0[#] 3	1541.0	(13/2+)	897.47	(9/2+)				
670.7 2	1.5 5	1751.3	15/2+	1080.56	11/2+	Q			
673.7[#] 2	1.0[#] 3	1466.1	(13/2− to 17/2−)	792.4	(11/2−,13/2−)				
680.5 2	10.0 10	1508.3	(19/2−)	827.8	(15/2−)	Q			
684.1 2	3.5[#] 11	1622.4	(15/2+)	938.2	(11/2)+				
734.3 2	3.7 11	2242.6	(17/2−,21/2−)	1508.3	(19/2−)				
772.8[#] 2	1.0[#] 3	2395.2	(11/2+,19/2+)	1622.4	(15/2+)				
802.8 2	2.2 7	2311.1	(23/2−)	1508.3	(19/2−)	(Q)			
804.5 2	1.7 5	804.72	5/2+	0.0	1/2+				

† From 1981He04.
‡ At 125°. The authors state that ΔIγ=10% for the strong peaks and 30% for the weak ones.
# Derived from the coincidence data.
@ Possible doublet including a component deexciting the 587 level on the basis of the results from ^{127}Cs β^+ decay (evaluator).
& From α(K)exp and γ(θ).

γ(^{127}Xe) (continued)

[a] α(K)exp=0.011 *2* for the doubly placed 483.5γ.
[b] From $\gamma(\theta)$ (1981He04).
[c] 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.
[d] Multiply placed with intensity suitably divided.

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Level Scheme

Intensities: Relative I_γ

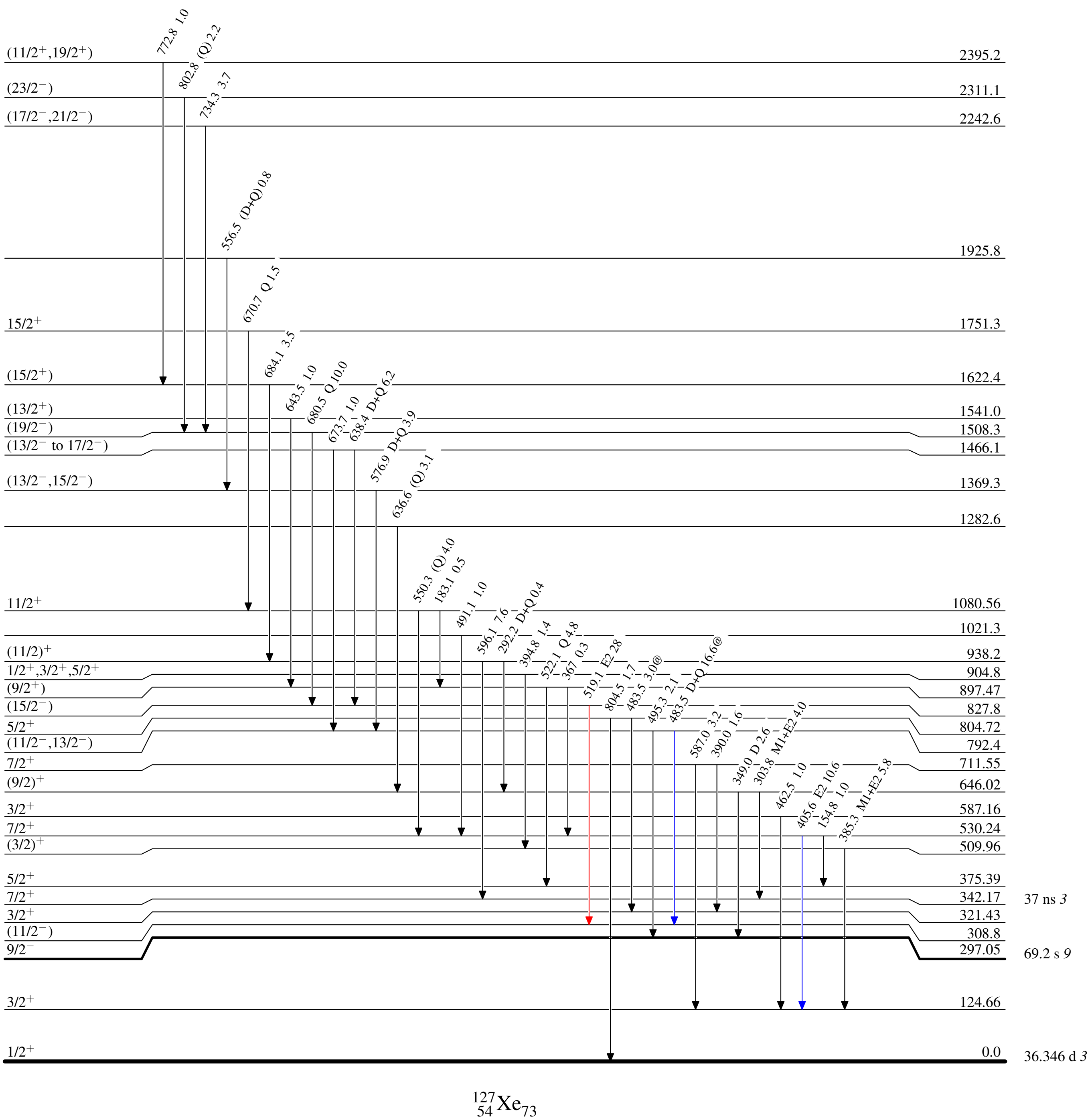
@ Multiply placed: intensity suitably divided

Legend

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

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

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



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Level Scheme (continued)

Intensities: Relative I_γ

@ Multiply placed: intensity suitably divided