^{128}Te(α,2nγ) 1981Go04

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 93, 33 (2001)	11-May-2001

1981Go04: E=25.5-27 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma(\theta)$. See also ^{130}Te(^{3}He,3nγ).
1996Ko16: E=26 MeV. Measured lifetimes by $\gamma\gamma$(t).
Others:
1983Ba64: E=6-30 MeV. Measured Eγ, Iγ.
1983Go02: E=27 MeV. Measured g factor by $\gamma(\theta$,H,t).
1969Be04: E=28 MeV. Six gammas reported.

^{130}Xe Levels

See (^{3}He,3nγ) for limits of lifetimes for several levels.

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$[#]	Comments
0.0[@]	0$^+$		
536.21[@] *10*	2$^+$		
1122.41 *16*	2$^+$		
1204.82[@] *14*	4$^+$		
1632.86 *16*	3$^+$		
1808.62 *21*	(4$^+$)		
1944.40[@] *16*	6$^+$		
2059.83[&] *16*	5$^-$	0.20 ns *10*	
2103.68 *21*	4$^-$	0.50 ns *10*	
2310.28 *23*	5$^-$		
2346.19 *24*	6$^-$		
2362.25 *23*	5$^+$		
2375.59[&] *22*	7$^-$	0.30 ns *10*	
2442.33 *21*	6$^-$		
2659.58 *24*	7$^-$		
2697.20[@] *19*	8$^+$		
2842.0[&] *3*	8$^-$		
2931.7 *4*	(8)$^+$		
2972.8 *3*	10$^+$	4.7 ns *4*	g=−0.204 *14* (1983Go02) g: DPAD method. $T_{1/2}$: γ(t). Average of 4.6 *4* (1996Ko16) and 4.8 ns *5* (1981Go04).
3058.6 *4*			
3071.9[&] *3*	(9$^-$)		
3278.2 *5*			
3461.5[@] *4*	10$^+$		
3542.7 *4*	(10$^-$)		
3693.8 *4*	12$^+$		
3893.8 *5*	(11$^-$)		

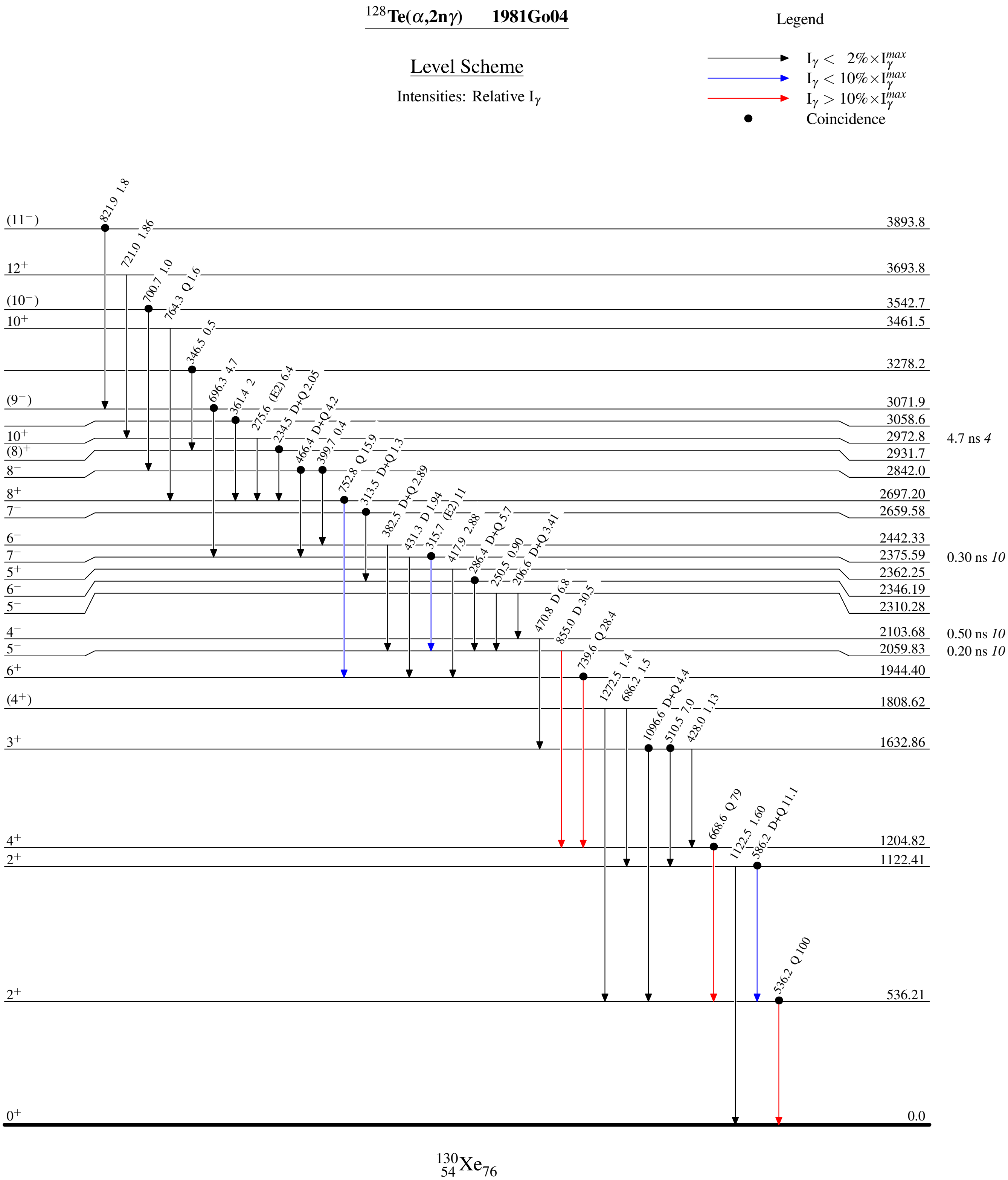
[†] From least-squares fit to Eγ's.
[‡] Based on $\gamma(\theta)$, excitation functions, and other supporting data (ce and lifetimes) in (^{3}He,3nγ).
[#] From γ(t) (1996Ko16), unless otherwise stated.
[@] Band(A): g.s. band.
[&] Band(B): band based on 5$^-$.

^{128}Te(α,2nγ) 1981Go04 (continued)

γ(^{130}Xe)

E_γ †	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult. #	δ	α &	Comments
206.6 *2*	3.41 *17*	2310.28	5⁻	2103.68	4⁻	D+Q	−0.25 *5*		A_2=−0.51 *4*, A_4=−0.06 *4*.
234.5 *3*	2.05 *10*	2931.7	(8)⁺	2697.20	8⁺	D+Q			A_2=+0.39 *4*, A_4=+0.03 *5*.
250.5 *3*	0.90 *7*	2310.28	5⁻	2059.83	5⁻				
275.6 *2*	6.4 *3*	2972.8	10⁺	2697.20	8⁺	(E2)		0.0553	A_2=+0.22 *3*, A_4=−0.02 *4*.
286.4 *2*	5.7 *3*	2346.19	6⁻	2059.83	5⁻	D+Q	−0.34 *2*		A_2=−0.67 *3*, A_4=0.00 *3*.
313.5 *3*	1.3 @	2659.58	7⁻	2346.19	6⁻	D+Q	−0.21 *3*		A_2=+0.32 *3*, A_4=−0.10 *3* for 313.5+315.7.
315.7 *2*	11 *1*	2375.59	7⁻	2059.83	5⁻	(E2)		0.0357	A_2=+0.32 *3*, A_4=−0.10 *3* for 313.5+315.7.
346.5 *3*	0.5 @	3278.2		2931.7	(8)⁺				
361.4 *3*	2 @	3058.6		2697.20	8⁺				
382.5 *2*	2.89 *14*	2442.33	6⁻	2059.83	5⁻	D+Q	−0.50 +*16*−*12*		A_2=−0.78 *6*, A_4=−0.06 *7*.
399.7 *3*	0.4 @	2842.0	8⁻	2442.33	6⁻				
417.9 *2*	2.88 *14*	2362.25	5⁺	1944.40	6⁺				
428.0 *3*	1.13 *11*	1632.86	3⁺	1204.82	4⁺				
431.3 *3*	1.94 *11*	2375.59	7⁻	1944.40	6⁺	D			A_2=−0.17 *3*, A_4=+0.2 *2*.
466.4 *2*	4.2 *5*	2842.0	8⁻	2375.59	7⁻	D+Q			A_2=−0.88 *6*, A_4=0.13 *5*. δ: −0.45 *7* or −1.35 *14*.
470.8 *2*	6.8 *3*	2103.68	4⁻	1632.86	3⁺	D			A_2=−0.19 *6*, A_4=+0.01 *6*.
510.5 *2*	7.0 @	1632.86	3⁺	1122.41	2⁺				
536.2 *1*	100	536.21	2⁺	0.0	0⁺	Q			A_2=+0.24 *2*, A_4=−0.08 *2*.
586.2 *2*	11.1 *6*	1122.41	2⁺	536.21	2⁺	D+Q			A_2=+0.07 *4*, A_4=−0.09 *4*. δ: +7.1 +*59*−*24* or −0.31 +*7*−*11*.
668.6 *1*	79 *4*	1204.82	4⁺	536.21	2⁺	Q			A_2=+0.28 *2*, A_4=−0.06 *2*.
686.2 *3*	1.5 *2*	1808.62	(4⁺)	1122.41	2⁺				
696.3 *2*	4.7 @	3071.9	(9⁻)	2375.59	7⁻				
700.7 *3*	1.0 @	3542.7	(10⁻)	2842.0	8⁻				
721.0 *2*	1.86 *2*	3693.8	12⁺	2972.8	10⁺				A_2=+0.3 *2*, A_4=−0.1 *3*.
739.6 *1*	28.4 *14*	1944.40	6⁺	1204.82	4⁺	Q			A_2=+0.31 *2*, A_4=−0.08 *2*.
752.8 *1*	15.9 *8*	2697.20	8⁺	1944.40	6⁺	Q			A_2=+0.29 *2*, A_4=−0.08 *2*.
764.3 *3*	1.6 *2*	3461.5	10⁺	2697.20	8⁺	Q			A_2=+0.22 *10*, A_4=−0.14 *11*.
821.9 *3*	1.8 @	3893.8	(11⁻)	3071.9	(9⁻)				
855.0 *1*	30.5 *15*	2059.83	5⁻	1204.82	4⁺	D			A_2=−0.20 *3*, A_4=+0.01 *2*.
1096.6 *2*	4.4 *2*	1632.86	3⁺	536.21	2⁺	D+Q	+1.3 +*38*−*8*		A_2=+0.37 *11*, A_4=+0.06 *13*.
1122.5 *3*	1.60 *12*	1122.41	2⁺	0.0	0⁺				
1272.5 *3*	1.4 *5*	1808.62	(4⁺)	536.21	2⁺				

† Uncertainty assigned on the basis of (by 1981Go04) statement that Δ(Eγ) are 0.05 to 0.3 keV depending on Iγ and complexity of spectrum.
‡ At 27 MeV.
\# From $\gamma(\theta)$, ce measurements in (^{3}He,3nγ) and $T_{1/2}$'s.
@ From coincidence data.
& 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.



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Level Scheme
Intensities: Relative I_γ
Legend
$I_\gamma <$ 2%×I_γ^{max}
$I_\gamma <$ 10%×I_γ^{max}
$I_\gamma >$ 10%×I_γ^{max}
Coincidence
(11−) 3893.8
12+ 3693.8
(10−) 3542.7
10+ 3461.5
3278.2
(9−) 3071.9
3058.6
10+ 2972.8 4.7 ns 4
(8)+ 2931.7
8− 2842.0
8+ 2697.20
7− 2659.58
6− 2442.33
7− 2375.59 0.30 ns 10
5+ 2362.25
6− 2346.19
5− 2310.28
4− 2103.68 0.50 ns 10
5− 2059.83 0.20 ns 10
6+ 1944.40
(4+) 1808.62
3+ 1632.86
4+ 1204.82
2+ 1122.41
2+ 536.21
0+ 0.0
821.9 1.8
721.0 1.86
700.7 1.0
764.3 Q 1.6
346.5 0.5
696.3 4.7
361.4 2
275.6 (E2) 6.4
234.5 D+Q 2.05
466.4 D+Q 4.2
399.7 0.4
752.8 Q 15.9
313.5 D+Q 1.3
382.5 D+Q 2.89
431.3 D 1.94
315.7 (E2) 11
417.9 2.88
286.4 D+Q 5.7
250.5 0.90
206.6 D+Q 3.41
470.8 D 6.8
855.0 D 30.5
739.6 Q 28.4
1272.5 1.4
686.2 1.5
1096.6 D+Q 4.4
510.5 7.0
428.0 1.13
668.6 Q 79
1122.5 1.60
586.2 D+Q 11.1
536.2 Q 100
$^{130}_{54}Xe_{76}$

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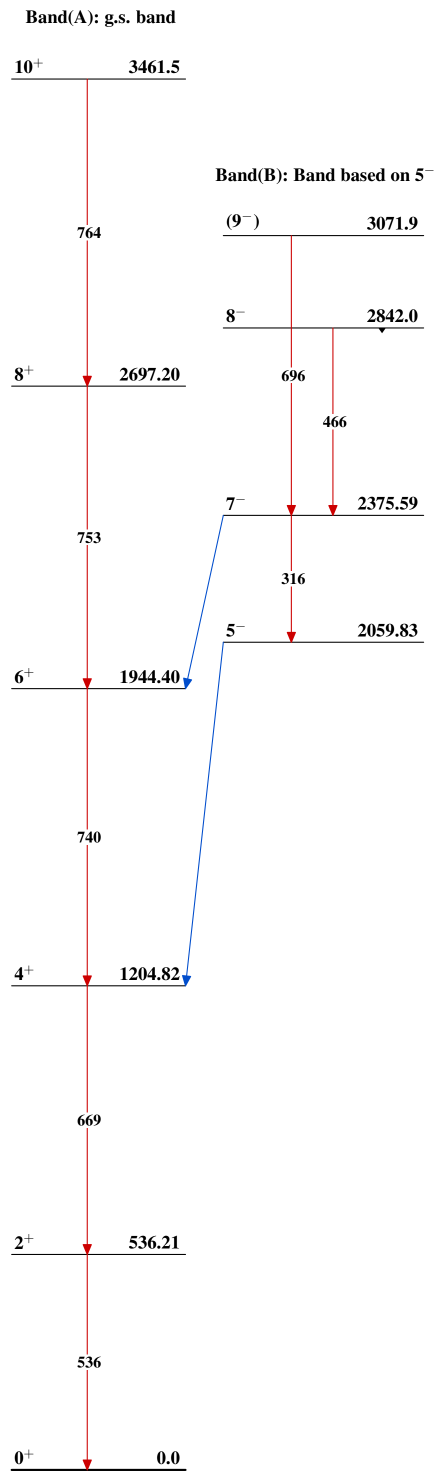

$^{130}_{54}Xe_{76}$