

¹³⁰Te(¹²C,3nγ):E=50.5 MeV 2006Bu04

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	P. K. Joshi, B. Singh, S. Singh, A. K. Jain		NDS 138, 1 (2016)	15-Oct-2016

2006Bu04: E=50.5 MeV. Measured E_γ, I_γ, γγ using three HPGe detectors at Bucharest Tandem accelerator laboratory.

¹³⁹Ce Levels

E(level) [†]	J ^{π‡}	Comments
0.0	3/2 ⁺	
255.1	1/2 ⁺	E(level): level not populated in this reaction.
754.24 [#] 8	11/2 ⁻	
2063.91 17	11/2 ⁻	
2360.90 [#] 17	15/2 ⁻	
2631.8 [#] 3	19/2 ⁻	
2819.5 [#] 3	21/2 ⁻	
3186.9 [#] 3	23/2 ⁻	
3876.9 4	(23/2 ⁻)	
4013.6 [@] 4	(23/2 ⁻)	
4083.7 [@] 3	(25/2 ⁻)	
4098.8 3	(25/2 ⁻)	
4276.6 [@] 4	(27/2 ⁻)	
4404.5 [#] 4	27/2 ⁻	
4756.3 [@] 4	(29/2 ⁻)	
4808.4 [#] 4	31/2 ⁻	
5532.3 [@] 4	(31/2 ⁻)	
5884.7 [#] 5		
5916.2? 8		

[†] From least-squares fit to E_γ data.

[‡] As given by 2006Bu04 based on their DCO data and previous assignments for low-lying levels.

[#] Band(A): γ cascade based on πh_{11/2} orbital.

[@] Band(B): Band based on (23/2⁻).

γ(¹³⁹Ce)

DCO(D) correspond to gates on ΔJ=1, dipole transitions, and DCO(Q) to gate on ΔJ=2, quadrupole transition.

E _γ	I _γ	E _i (level)	J _i ^π	E _f	J _f ^π	Mult. [†]	Comments
(70.1)		4083.7	(25/2 ⁻)	4013.6	(23/2 ⁻)		
187.7 1	56.3 17	2819.5	21/2 ⁻	2631.8	19/2 ⁻	D+Q	DCO(D)=0.68 7
192.9 1	15.3 11	4276.6	(27/2 ⁻)	4083.7	(25/2 ⁻)	D	DCO(D)=0.85 12
206.7 2	2.5 4	4083.7	(25/2 ⁻)	3876.9	(23/2 ⁻)		
221.8 2	3.3 10	4098.8	(25/2 ⁻)	3876.9	(23/2 ⁻)	D	DCO(D)=1.13 21
270.9 2	100 5	2631.8	19/2 ⁻	2360.90	15/2 ⁻	Q	DCO(D)=1.96 22
297.0 1	5.9 3	2360.90	15/2 ⁻	2063.91	11/2 ⁻	Q	DCO(Q)=0.87 18
305.7 1	11.9 5	4404.5	27/2 ⁻	4098.8	(25/2 ⁻)	D	DCO(D)=0.88 11
367.4 1	36.4 9	3186.9	23/2 ⁻	2819.5	21/2 ⁻	D	DCO(D)=1.23 11
403.9 1	12.8 12	4808.4	31/2 ⁻	4404.5	27/2 ⁻	Q	DCO(D)=1.9 3
479.8 1	7.2 15	4756.3	(29/2 ⁻)	4276.6	(27/2 ⁻)	D+Q	DCO(D)=0.67 23

Continued on next page (footnotes at end of table)

$^{130}\text{Te}(^{12}\text{C},3n\gamma):E=50.5\text{ MeV}$ **2006Bu04** (continued) $\gamma(^{139}\text{Ce})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [†]	Comments
754.24 8		754.24	11/2 ⁻	0.0	3/2 ⁺	M4	$E_\gamma, \text{Mult.}$: from Adopted Levels.
776.0 1	3.1 7	5532.3	(31/2 ⁻)	4756.3	(29/2 ⁻)	(D)	DCO(D)=0.96 30
896.8 1	13.8 7	4083.7	(25/2 ⁻)	3186.9	23/2 ⁻	D	DCO(D)=1.14 25
912.0 2	3.7 5	4098.8	(25/2 ⁻)	3186.9	23/2 ⁻	D	DCO(D)=0.81 23
1057.3 2	12.5 8	3876.9	(23/2 ⁻)	2819.5	21/2 ⁻		
1076.3 [‡] 3	5.2 6	5884.7?		4808.4	31/2 ⁻		
1107.8 [‡] 7	4.4 4	5916.2?		4808.4	31/2 ⁻		
1194.1 2	3.4 12	4013.6	(23/2 ⁻)	2819.5	21/2 ⁻	D+Q	DCO(D)=1.74 34
1217.5 2	7.7 10	4404.5	27/2 ⁻	3186.9	23/2 ⁻	Q	DCO(D)=1.50 40
1255.6 2	7.5 21	5532.3	(31/2 ⁻)	4276.6	(27/2 ⁻)		
1279.3 2	7.5 14	4098.8	(25/2 ⁻)	2819.5	21/2 ⁻	Q	DCO(D)=1.52 28
1309.7 2	5.4 3	2063.91	11/2 ⁻	754.24	11/2 ⁻	D	DCO(Q)=1.48 6
							Mult.: $\Delta J=0$ transition.
1606.6 2	94.3 42	2360.90	15/2 ⁻	754.24	11/2 ⁻	Q	DCO(D)=1.78 25

[†] Assigned by the evaluators based on DCO data in **2006Bu04**.

[‡] Placement of transition in the level scheme is uncertain.

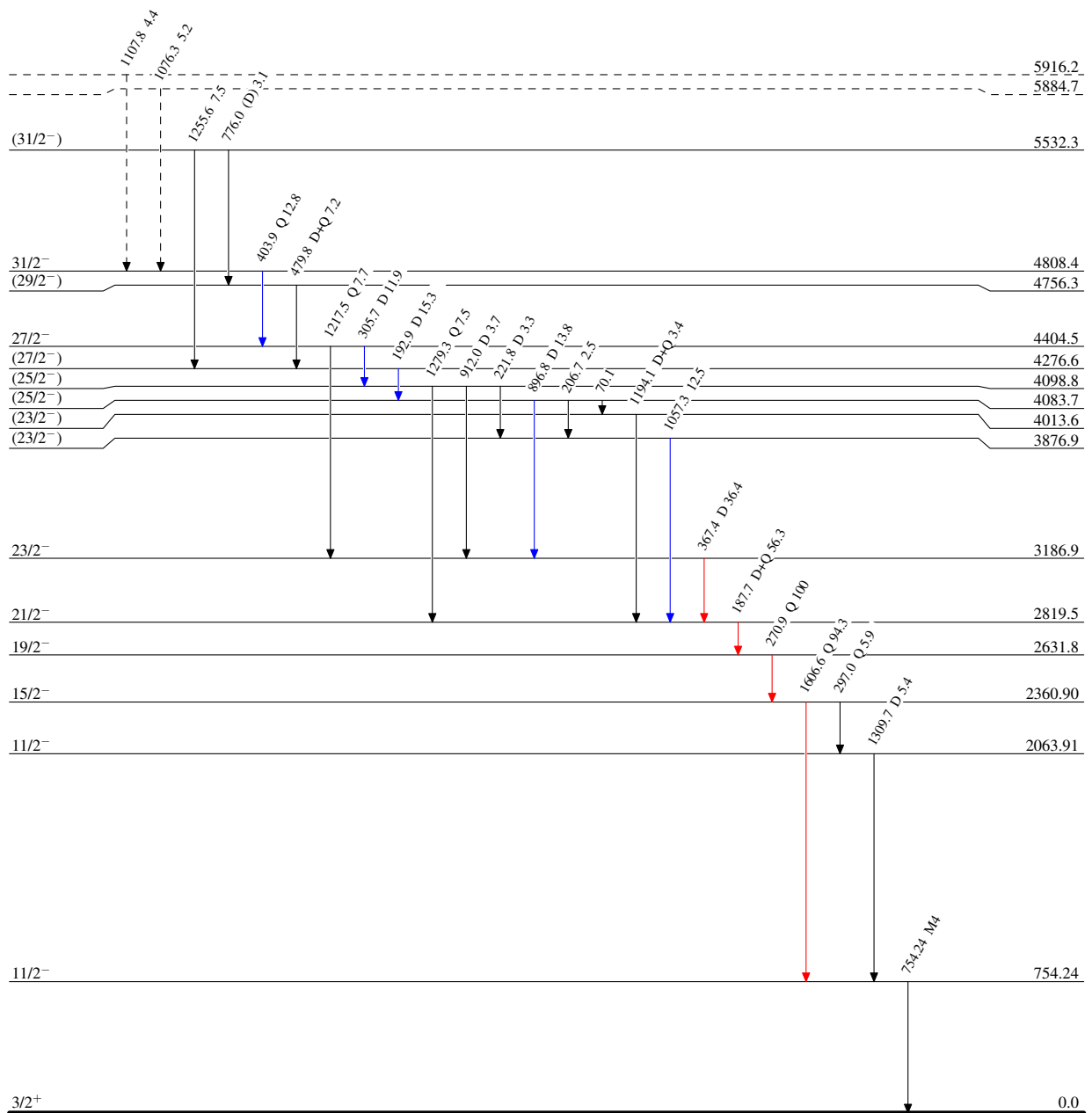
$^{130}\text{Te}(^{12}\text{C},3n\gamma):E=50.5\text{ MeV}$ 2006Bu04

Legend

Level Scheme

Intensities: Relative I_γ

- ▶ $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- ▶ $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- ▶ $I_\gamma > 10\% \times I_\gamma^{\text{max}}$
- - -▶ γ Decay (Uncertain)

 $^{139}_{58}\text{Ce}_{81}$

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