

^{129}Te β^- decay (69.6 min) 1976Ma35

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Janos Timar and Zoltan Elekes, Balraj Singh		NDS 121, 143 (2014)	31-May-2014

Parent: ^{129}Te : $E=0.0$; $J^\pi=3/2^+$; $T_{1/2}=69.6$ min 3; $Q(\beta^-)=1502$ 3; $\% \beta^-$ decay=100.0

^{129}Te - $Q(\beta^-)$: From 2012Wa38.

^{129}Te - $J^\pi, T_{1/2}$: From ^{129}Te Adopted Levels.

1976Ma35: 105 mg enriched ^{128}Te (99.5%) was irradiated at the Pool Type Reactor, Livermore. Measured E_γ , I_γ , $\gamma\gamma$ -coincidences using two Ge(Li) detectors.

Others:

1974De15: E_γ , I_γ , $\gamma\gamma$, $\gamma\gamma(\theta)$ measurements. ^{129}Te source produced by (n, γ) reaction in the BR2 reactor at Mol, Belgium. Two Ge(Li) and one NaI(Tl) detectors used for γ -ray measurements. The $\gamma\gamma(\theta)$ data were obtained using two Ge(Li) detectors.

1973Si14: $\gamma(\text{temp}, \theta)$ measurements on oriented nuclei. 20 mg enriched ^{128}Te irradiated with neutrons. ^3He - ^4He dilution refrigerator was used to perform the nuclear orientation measurements; the temperature of the radioactive source was kept between 14 mK and 50 mK. Two Ge(Li) detected the γ rays at 0 and 90 degrees with respect to the magnetic field.

1969Di01: 100 mg enriched ^{130}Te (99.5%) used in (n,2n) reaction at Livermore 14 MeV neutron generator. 200 mg enriched ^{128}Te (99.46%) irradiated at Livermore pool-type reactor. The γ radiation was detected by 6 cm³ and 20 cm³ Ge(Li) detectors. Coincidence measurements were performed with two NaI(Tl) detectors.

1968Go34, 1956Gr10: β and ce measurements.

1964De10: 3 mg of enriched ^{129}Te (97%) irradiated with neutrons in the Apsara reactor, and 10 mg of enriched ^{128}Te in the DIDO reactor, Harwell. NaI(Tl) used for detecting γ rays and determining relative intensities. Resolution was 8.5% at 662 keV. For $\gamma\gamma$ coincidence, two NaI(Tl) were used. Beta spectrum of $^{129\text{m}}\text{Te}$ isomer was studied with Siegbahn-Slatis spectrometer. Beta spectrum of short-lived activity was studied with 4π scintillation β ray spectrometer using plastic phosphors. The $\beta\gamma$ coincidences were measured. The log ft values were deduced.

Other γ -ray measurements: 1968Bu21, 1967Be03, 1965Hu08, 1965Bo12, 1964Ra04, 1963Ra11, 1956Gr10, 1955St94, 1955Ma54, 1955Da37.

Other $\gamma\gamma(\theta)$ measurements: 1969Sa22, 1969Ma33, 1969Ma47, 1967Va37, 1965Gu07, 1964Ka09, 1963Ra11.

 ^{129}I Levels

E(level) [†]	J^π [‡]	$T_{1/2}$ [‡]	Comments
0.0	$7/2^+$	1.57×10^7 y 4	$T_{1/2}$: from (β)(0.0278 ce(L))(t) (1966Sa06). Others (from $\beta\gamma(t)$ or $\gamma\gamma(t)$): 16.4 ns 11 (1965Pa04), 14.4 ns 5 (1964Ka09), 14.4 ns 7 (1964Jh02), 15.9 ns 13 (1963Go17), 18.6 ns 11 (1962De18).
27.80 2	$5/2^+$	16.8 ns 2	
278.38 3	$3/2^+$	0.104 ns 12	
487.35 3	$5/2^+$ #	11.6 ps 27	
559.62 3	$1/2^+$		
729.57 3	$(9/2)^+$ #	3.8 ps 4	
768.76 3	$(7/2)^+$ #		
829.92 3	$3/2^+, 5/2^+$		
844.82 3	$(7/2)^+$		
1047.35 4	$3/2^+, 5/2^+$		
1050.21 3	$(7/2)^+$ #		
1111.65 3	$5/2^+$ #		
1196.65 13			
1209.80 10	$1/2^+$		
1260.66 3	$3/2^+, 5/2^+$		
1291.94 4	$(3/2^+, 5/2^+)$		

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

[‡] From Adopted Levels unless otherwise stated.

Assignment also from $\gamma(\text{temp}, \theta)$ data (1973Si14).

^{129}Te β^- decay (69.6 min) $^{1976}\text{Ma35}$ (continued) β^- radiations

E(decay)	E(level)	$I\beta^-$ [†]	Log ft	Comments
(210 3)	1291.94	0.033 4	6.32 6	av $E\beta=58.09$ 97
(241 3)	1260.66	0.039 3	6.44 4	av $E\beta=67.61$ 99
(292 3)	1209.80	0.00055 11	8.6 1	av $E\beta=83.5$ 11
(305 3)	1196.65	0.00066 16	8.5 1	av $E\beta=87.7$ 11
(390 3)	1111.65	0.88 6	5.77 4	av $E\beta=115.7$ 11 Measured $E\beta=290$ 60 (1956Gr10), 395 (1964De10). Measured $I\beta=10.4$ (1956Gr10).
(455 3)	1047.35	0.0091 9	7.97 5	av $E\beta=137.7$ 12
(672 3)	829.92	0.213 16	7.18 4	av $E\beta=216.7$ 12 Measured $E\beta=690$ 100, $I\beta=3.7$ (1956Gr10).
(772 [‡] 3)	729.57	0.0007 4	9.9 3	av $E\beta=255.1$ 13 $I\beta^-$: no β feeding is expected to this level, apparent small feeding is likely due to missing weak γ rays.
(942 3)	559.62	0.252 18	7.64 4	av $E\beta=322.6$ 13
(1015 3)	487.35	9.3 7	6.19 4	av $E\beta=352.0$ 14 Measured $E\beta=989$ 20 (1956Gr10), 955, 1010 (1964De10). Measured $I\beta=15.4$ (1956Gr10).
(1224 3)	278.38	0.56 5	7.71 4	av $E\beta=439.0$ 14
(1474 3)	27.80	89 13	5.82 7	av $E\beta=546.6$ 14 Measured $E\beta=1453$ 5 (1956Gr10), 1452 10 (1964De10), 1476 4 (1968Go34). Measured $I\beta=70.5$ (1956Gr10).

[†] Absolute intensity per 100 decays.

[‡] Existence of this branch is questionable.

¹²⁹Te β⁻ decay (69.6 min) 1976Ma35 (continued)

γ(¹²⁹I)

I_γ normalization: From Σ(γ+ce to ground state)=100.

E _γ	I _γ ^a	E _i (level)	J _i ^π	E _f	J _f ^π	Mult. [@]	δ [@]	α ^{&}	Comments
27.81 5	212 21	27.80	5/2 ⁺	0.0	7/2 ⁺	M1+E2	-0.053 3	5.07 11	α(L)=4.06 9; α(M)=0.825 18; α(N)=0.165 4; α(O)=0.0186 4 E _γ : other: 27.78 5 (ce data in 1965Be26). δ: magnitude from L1/L2/L3=1/0.145 12/0.119 13 (1965Be26) and using BrIccMixing code; sign from δ=-0.045 14 (from ratio of lines in Mossbauer spectrum (1970De37). Others: α(exp)=4.5 5 (1964De10), 4.8 4 (1969Sa22) are in agreement with theoretical value deduced from δ=-0.053 3. Possible penetration effects are discussed by 1970Va06; these are expected to be very small in the case of 27.81-keV transition in ¹¹⁹ I. Other δ=0.016 11 from (460γ)(28γ)(θ) (1965Gu07). I _γ : no data given in 1976Ma35. Deduced from the ratio I(27γ)/I(209γ+ 251γ+278γ+281γ)=12.6 12 in 1969Di01 by the evaluators.
208.96 5	2.34 7	487.35	5/2 ⁺	278.38	3/2 ⁺	M1+E2	-0.18 4	0.0983 15	α(K)=0.0844 13; α(L)=0.01110 20; α(M)=0.00224 4 α(N)=0.000452 8; α(O)=5.27×10 ⁻⁵ 9 δ: weighted average of δ=-0.22 5 (1974De15) and -0.16 4 (1973Sa14). Other: -0.66 +28-13 (1965Gu07, as quoted by 1977Kr13) is in disagreement. 209γ(temp,θ): U ₂ F ₂ =+0.507 46 (1973Sa14); 1977Kr13 give δ=-0.16 4 from this work. (209γ)(251γ)(θ): A ₂ =+0.234 12, A ₄ =+0.011 22 (1974De15). (209γ)(278γ)(θ): A ₂ =-0.059 11, A ₄ =+0.018 18 (1974De15).
210.66 19	0.017 9	1260.66	3/2 ⁺ ,5/2 ⁺	1050.21	(7/2) ⁺	[M1+E2]		0.113 18	α(K)=0.093 12; α(L)=0.016 5; α(M)=0.0032 11 α(N)=0.00063 21; α(O)=6.8×10 ⁻⁵ 18
242.2 1	0.00002 1	729.57	(9/2) ⁺	487.35	5/2 ⁺	[E2]		0.0812	α(K)=0.0661 10; α(L)=0.01207 17; α(M)=0.00248 4 α(N)=0.000490 7; α(O)=5.13×10 ⁻⁵ 8 I _γ : from I(730γ) and I(242γ)/I(730γ) in 33.6 d decay.
250.62 5	4.97 15	278.38	3/2 ⁺	27.80	5/2 ⁺	M1+E2	+0.56 +16-12	0.0628 16	ΔI _γ : Estimated by evaluators in 33.6 d decay. α(K)=0.0534 11; α(L)=0.0076 5; α(M)=0.00153 9 α(N)=0.000308 18; α(O)=3.49×10 ⁻⁵ 15 251γ(temp,θ): U ₂ F ₂ =+0.225 29 (1973Sa14). δ: weighted average of δ=+0.53 +16-12

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$^{129}\text{Te} \beta^-$ decay (69.6 min) [1976Ma35](#) (continued)

$\gamma(^{129}\text{I})$ (continued)

E_γ	I_γ^a	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. @	$\delta^@$	$\alpha^\&$	Comments
270.37 6	0.060 4	829.92	3/2 ⁺ , 5/2 ⁺	559.62	1/2 ⁺	[M1+E2]		0.053 4	(1974De15, $\gamma\gamma(\theta)$) and +0.60 +21-13 (as quoted by 1977Kr13 from $\gamma(\text{temp},\theta)$ data of 1973Si14). Others: +3.5 +20-11 ($\gamma\gamma(\theta)$, 1974De15) is discarded since it is inconsistent with low-temperature orientation data; +1.2 +38-8 deduced by 1977Kr13 from $\gamma(\theta)$ in (α, α') data of 1973Re08.
278.43 5	7.36 22	278.38	3/2 ⁺	0.0	7/2 ⁺	E2		0.0512	$\alpha(\text{K})=0.0422$ 6; $\alpha(\text{L})=0.00723$ 11; $\alpha(\text{M})=0.001483$ 21 $\alpha(\text{N})=0.000293$ 5; $\alpha(\text{O})=3.12 \times 10^{-5}$ 5
281.26 5	2.14 7	559.62	1/2 ⁺	278.38	3/2 ⁺	M1+E2	-0.08 4	0.0442	278 γ +281 $\gamma(\text{temp},\theta)$: $U_2F_2=+0.001$ 27 (1973Sa14). $\alpha(\text{K})=0.0381$ 6; $\alpha(\text{L})=0.00487$ 7; $\alpha(\text{M})=0.000980$ 15 $\alpha(\text{N})=0.000199$ 3; $\alpha(\text{O})=2.33 \times 10^{-5}$ 4 δ : from 1977Kr13 based on $\delta=-0.08$ 3 or +2.09 14 ($\gamma\gamma(\theta)$, 1974De15). Other $\delta=-0.01$ 4 (1965ArZY), -0.42 3 (1965Gu07) as quoted by 1977Kr13. (281 γ)(251 γ)(θ): $A_2=+0.238$ 15, $A_4=+0.014$ 26 (1974De15). (281 γ)(278 γ)(θ): $A_2=-0.048$ 14, $A_4=-0.014$ 23 (1974De15). Additional information 2.
281.38 20	<0.002	768.76	(7/2) ⁺	487.35	5/2 ⁺				
281.7 1	0.020 [†] 4	1111.65	5/2 ⁺	829.92	3/2 ⁺ , 5/2 ⁺				
342.54 5	0.11 1	829.92	3/2 ⁺ , 5/2 ⁺	487.35	5/2 ⁺	M1+E2	+1.0 8	0.0264	$\alpha(\text{K})=0.0224$ 6; $\alpha(\text{L})=0.0032$ 3; $\alpha(\text{M})=0.00065$ 6 $\alpha(\text{N})=0.000130$ 11; $\alpha(\text{O})=1.47 \times 10^{-5}$ 8 δ : from 1974De15.
342.88 5	0.640 5	1111.65	5/2 ⁺	768.76	(7/2) ⁺	[M1+E2]		0.0264	$\alpha(\text{K})=0.0224$ 6; $\alpha(\text{L})=0.0032$ 3; $\alpha(\text{M})=0.00065$ 7 $\alpha(\text{N})=0.000129$ 12; $\alpha(\text{O})=1.46 \times 10^{-5}$ 8 (343 γ)(460 γ)(θ): $A_2=-0.34$ 6, $A_4=+0.03$ 8 (1974De15); $\delta=+1.0$ 8 for 3/2 to 5/2 transition.
382.08 14	0.008 3	1111.65	5/2 ⁺	729.57	(9/2) ⁺	[E2]		0.0188	$\alpha(\text{K})=0.01579$ 23; $\alpha(\text{L})=0.00242$ 4; $\alpha(\text{M})=0.000492$ 7 $\alpha(\text{N})=9.81 \times 10^{-5}$ 14; $\alpha(\text{O})=1.077 \times 10^{-5}$ 16
415.88 14	0.008 3	1260.66	3/2 ⁺ , 5/2 ⁺	844.82	(7/2) ⁺				
459.60 5	100 3	487.35	5/2 ⁺	27.80	5/2 ⁺	M1+E2	-0.08 +4-5	0.01260	$\alpha(\text{K})=0.01090$ 16; $\alpha(\text{L})=0.001369$ 20; $\alpha(\text{M})=0.000275$ 4 $\alpha(\text{N})=5.57 \times 10^{-5}$ 8; $\alpha(\text{O})=6.56 \times 10^{-6}$ 10 δ : from $\gamma(\text{temp},\theta)$ data of 1973Sa14. 1977Kr11 evaluation recommended -0.12 4 based on this value and five other δ values deduced from $\gamma\gamma(\theta)$ data and one from $\gamma(\theta)$ in (α, α'), all of which are in disagreement with each other. Evaluators prefer the measured value from 1973Sa14 since only one γ is involved. Value of $\delta=-0.30$ 8 from 460 $\gamma(\theta)$ in (α, α') does not seem reliable due to almost isotropic

¹²⁹Te β⁻ decay (69.6 min) 1976Ma35 (continued)

γ(¹²⁹I) (continued)

<u>E_γ</u>	<u>I_γ^a</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[@]</u>	<u>δ[@]</u>	<u>α^{&}</u>	<u>Comments</u>
462.04 20 487.39 5	<0.003 18.4 6	1291.94 487.35	(3/2 ⁺ ,5/2 ⁺) 5/2 ⁺	829.92 0.0	3/2 ⁺ ,5/2 ⁺ 7/2 ⁺	M1+E2	+0.50 +17-10	0.01057 24	distribution, whereas in γ(temp,θ) data of 1973Sa14, strong anisotropy is observed. 460γ(temp,θ): U ₂ F ₂ =-0.260 6 (1973Sa14). (460γ)(28γ)(θ): A ₂ =-0.033 11 (1974Ro32); δ=-0.03 +26-17 deduced by 1977Kr13; value agrees with δ from 1973Sa14. Additional information 1.
491.93 14 531.83 5	0.015 3 1.14 4	1260.66 559.62	3/2 ⁺ ,5/2 ⁺ 1/2 ⁺	768.76 27.80	(7/2) ⁺ 5/2 ⁺	[E2]		0.00722 11	α(K)=0.00911 22; α(L)=0.001169 18; α(M)=0.000235 4 α(N)=4.75×10 ⁻⁵ 8; α(O)=5.55×10 ⁻⁶ 10 487γ(temp,θ): U ₂ F ₂ =+0.544 20 (1973Sa14).
551.50 5	0.046 [‡] 5	829.92	3/2 ⁺ ,5/2 ⁺	278.38	3/2 ⁺	[M1+E2]		0.0073 8	α=0.00722 11; α(K)=0.00614 9; α(L)=0.000862 12; α(M)=0.0001745 25 α(N)=3.50×10 ⁻⁵ 5; α(O)=3.94×10 ⁻⁶ 6 α=0.0073 8; α(K)=0.0063 7; α(L)=0.00082 5; α(M)=0.000166 9 α(N)=3.34×10 ⁻⁵ 20; α(O)=3.9×10 ⁻⁶ 4
551.98 5	0.018 [‡] 3	1111.65	5/2 ⁺	559.62	1/2 ⁺	[E2]		0.00652 10	α=0.00652 10; α(K)=0.00555 8; α(L)=0.000774 11; α(M)=0.0001565 22 α(N)=3.14×10 ⁻⁵ 5; α(O)=3.55×10 ⁻⁶ 5
560.05 6 624.34 5	0.079 5 1.26 4	1047.35 1111.65	3/2 ⁺ ,5/2 ⁺ 5/2 ⁺	487.35 487.35	5/2 ⁺ 5/2 ⁺	M1(+E2)	+0.01 5	0.00595 16	α=0.00595 16; α(K)=0.00515 14; α(L)=0.000641 14; α(M)=0.000129 3 α(N)=2.60×10 ⁻⁵ 6; α(O)=3.07×10 ⁻⁶ 8 δ: weighted average (by 1977Kr13) of δ=+0.10 26 (1973Sa14), -0.02 6 and +0.06 8 (1974De15). 624γ(temp,θ): U ₂ F ₂ =-0.4 2 (1973Sa14). (624γ)(209γ)(θ): A ₂ =-0.27 7, A ₄ =+0.05 9 (1974De15). (624γ)(460γ)(θ): A ₂ =+0.151 9, A ₄ =+0.003 12 (1974De15). (624γ)(487γ)(θ): A ₂ =-0.290 25, A ₄ =-0.002 36 (1974De15).
701.10 16 701.76 5	0.017 4 0.0006 1	1260.66 729.57	3/2 ⁺ ,5/2 ⁺ (9/2) ⁺	559.62 27.80	1/2 ⁺ 5/2 ⁺	[E2]		0.00350 5	α=0.00350 5; α(K)=0.00300 5; α(L)=0.000399 6; α(M)=8.05×10 ⁻⁵ 12 α(N)=1.620×10 ⁻⁵ 23; α(O)=1.86×10 ⁻⁶ 3 I _γ : from I(730γ) and I(701γ)/I(730γ). ΔI _γ : Estimated by evaluators.
722.5 2	≤0.003	1209.80	1/2 ⁺	487.35	5/2 ⁺				

¹²⁹Te β⁻ decay (69.6 min) 1976Ma35 (continued)

γ(¹²⁹I) (continued)

<u>E_γ</u>	<u>I_γ^a</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult. @</u>	<u>δ[@]</u>	<u>α^{&}</u>	<u>Comments</u>
729.57 5	0.016 4	729.57	(9/2) ⁺	0.0	7/2 ⁺	M1+E2	-0.34 6	0.00402 7	α=0.00402 7; α(K)=0.00348 6; α(L)=0.000432 7; α(M)=8.67×10 ⁻⁵ 14 α(N)=1.76×10 ⁻⁵ 3; α(O)=2.07×10 ⁻⁶ 4
732.62 16 740.96 5	0.017 3 0.486 17	1291.94 768.76	(3/2 ⁺ ,5/2 ⁺) (7/2) ⁺	559.62 27.80	1/2 ⁺ 5/2 ⁺	M1+E2	-0.27 10	0.00390 8	α=0.00390 8; α(K)=0.00338 7; α(L)=0.000419 8; α(M)=8.41×10 ⁻⁵ 15 α(N)=1.70×10 ⁻⁵ 3; α(O)=2.01×10 ⁻⁶ 4 I _γ : from I(768.77γ+769.01γ) and I(769.01γ) from γγ-coin. ΔI _γ : Estimated by evaluators.
768.77 5	0.055 6	768.76	(7/2) ⁺	0.0	7/2 ⁺				
769.01 5 773.54 17 802.10 5 804.60 13 817.0 2	0.0093 [†] 9 0.003 2 2.49 8 0.28 3 <0.0008	1047.35 1260.66 829.92 1291.94 844.82	3/2 ⁺ ,5/2 ⁺ 3/2 ⁺ ,5/2 ⁺ 3/2 ⁺ ,5/2 ⁺ (3/2 ⁺ ,5/2 ⁺) (7/2) ⁺	278.38 487.35 27.80 487.35 27.80	3/2 ⁺ 5/2 ⁺ 5/2 ⁺ 5/2 ⁺ 5/2 ⁺	M1+E2	+0.46 4	0.00303 5	α=0.00303 5; α(K)=0.00262 4; α(L)=0.000325 5; α(M)=6.52×10 ⁻⁵ 10 α(N)=1.322×10 ⁻⁵ 20; α(O)=1.556×10 ⁻⁶ 24
829.93 5 833.28 5 918.29 15 931.57 25 982.27 5 1013.57 8 1019.43 6 1022.43 5	0.083 3 0.590 18 0.008 2 0.0027 12 0.208 7 0.017 4 0.029 7 0.009 1	829.92 1111.65 1196.65 1209.80 1260.66 1291.94 1047.35 1050.21	3/2 ⁺ ,5/2 ⁺ 5/2 ⁺ 5/2 ⁺ 1/2 ⁺ 3/2 ⁺ ,5/2 ⁺ (3/2 ⁺ ,5/2 ⁺) 3/2 ⁺ ,5/2 ⁺ (7/2) ⁺	0.0 278.38 278.38 278.38 278.38 278.38 27.80 27.80	7/2 ⁺ 3/2 ⁺ 3/2 ⁺ 3/2 ⁺ 3/2 ⁺ 3/2 ⁺ 5/2 ⁺ 5/2 ⁺	M1+E2	-0.02 2	0.00188 3	α=0.00188 3; α(K)=0.001633 23; α(L)=0.000200 3; α(M)=4.00×10 ⁻⁵ 6 α(N)=8.12×10 ⁻⁶ 12; α(O)=9.60×10 ⁻⁷ 14
1050.21 5 1083.85 5	0.009 [#] 1 6.4 2	1050.21 1111.65	(7/2) ⁺ 5/2 ⁺	0.0 27.80	7/2 ⁺ 5/2 ⁺	M1+E2	+0.56 +24-14	0.00156 6	α=0.00156 6; α(K)=0.00136 6; α(L)=0.000167 6; α(M)=3.34×10 ⁻⁵ 12 α(N)=6.76×10 ⁻⁶ 24; α(O)=8.0×10 ⁻⁷ 3 δ: other: +0.15 10 quoted by 1977Kr13 from (1084γ)(28γ)(θ) in 1965ArZY. Additional information 3.
1111.64 5	2.48 10	1111.65	5/2 ⁺	0.0	7/2 ⁺	M1(+E2)	+0.06 5	0.001557 22	α=0.001557 22; α(K)=0.001351 19; α(L)=0.0001650 24; α(M)=3.30×10 ⁻⁵ 5 α(N)=6.70×10 ⁻⁶ 10; α(O)=7.92×10 ⁻⁷ 12; α(IPF)=5.96×10 ⁻⁷ 9
1168.8 2 1181.96 11 1232.82 5 1260.63 5	≤0.0006 0.0015 6 0.097 4 0.145 7	1196.65 1209.80 1260.66 1260.66	1/2 ⁺ 3/2 ⁺ ,5/2 ⁺ 3/2 ⁺ ,5/2 ⁺	27.80 27.80 27.80 0.0	5/2 ⁺ 5/2 ⁺ 5/2 ⁺ 7/2 ⁺				

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^{129}Te β^- decay (69.6 min) 1976Ma35 (continued)

$\gamma(^{129}\text{I})$ (continued)

E_γ	I_γ^a	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
1264.16 5	0.106 4	1291.94	(3/2 ⁺ ,5/2 ⁺)	27.80	5/2 ⁺	
1291.50 13	0.0036 5	1291.94	(3/2 ⁺ ,5/2 ⁺)	0.0	7/2 ⁺	E_γ : poor fit, level-energy difference=1291.94; quoted uncertainty may be underestimated.

† From $\gamma\gamma$ -coin.

‡ From $I(\gamma)/I(551.50\gamma+551.98\gamma)$ in $\gamma\gamma$ -coin, and $I(551.50\gamma+551.98\gamma)=0.064$ 6 in singles.

1976Ma35 missed the data. Estimated from $I(1022\gamma)/I(1050\gamma)$ in ^{129}Te β^- decay (33.6 d).

@ From low-temperature nuclear orientation $\gamma(\text{temp},\theta)$ (1973Si14), unless otherwise stated.

& For [M1+E2] γ rays with no δ value, α overlaps M1 and E2.

^a For absolute intensity per 100 decays, multiply by 0.077 5.

^{129}Te β^- decay (69.6 min) ^{197}Mn β^+

Decay Scheme

Intensities: $I_{\gamma+ce}$ per 100 parent decays

$3/2^+$ 0.0
 $Q_{\beta^-} = 1502.3$
 $69.6 \text{ min } 3$
 52^-Te 77
 $Q_{\beta^+} = 100$

Legend
 $I_{\gamma} < 2\% \times I_{\gamma}^{\text{max}}$
 $I_{\gamma} < 10\% \times I_{\gamma}^{\text{max}}$
 $I_{\gamma} > 10\% \times I_{\gamma}^{\text{max}}$
 Coincidence

