Coulomb excitation **2009Ch59,1975Ba04,1975An16**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	J. Katakura	NDS 112, 495 (2011)	1-Jan-2010

2009Ch59: ^{125}Te(^{58}Ni,^{58}Ni′) E=195 MeV; Enriched target 92.8 %; Measured g-factor by transient-field technique; Particle-γ coin.; $\gamma\gamma(\theta)$; Beam provided by ANU 14UD Pelletron accelerator.
1968An15: (^{14}N,^{14}N′) E=43.6 MeV, semi γ.
1970Se03: (^{14}N,^{14}N′) E=44,48 MeV, semi γ.
1974Er05: (^{14}N,^{14}N′) E=42 MeV, Doppler-shift attenuation.
1974Ro40: (^{16}O,^{16}O′) E=33 MeV, semi ^{16}O-$\gamma(\theta$,H) μ.
1975Ba04: (^{16}O,^{16}O′) E=45 MeV, (α,α′) E=9.5,10.5 MeV, semi γ; Enriched target 95 %.
1975An16: (^{12}C,^{12}C′) E=37 MeV, (α,α′) E=12 MeV, semi γ.
1985Gr17: (^{12}C,^{12}C′),(^{14}N,^{14}N′),(^{16}O,^{16}O′), E≤60 MeV, semi γ, μ.
1989Be22: (^{32}S,^{32}S′) E=72-80 MeV, NaI(Tl), semi γ, μ.
1997At01,1995At01: ^{232}Th(^{125}Te^{38}ion,^{125}Te), E=27 MeV; $T_{1/2}$ (35-keV level), α(35 keV γ) as a function of ionic state of the ^{125}Te atom.
2007St24:^{125}Te(^{58}Ni,^{58}Ni′γ-) E=195 MeV; Measured g-factors; ^{58}Ni beam used to excite states of interest. Beam provided by ANU 14UD Pelletron accelerator.

^{125}Te Levels

E(level)[†‡]	J$^{\pi}$[@]	$T_{1/2}$[#]	Comments
0.0	1/2$^+$		
35.49	3/2$^+$		Additional information 1. $T_{1/2}$: ≈1.5 ns for charge state 44$^+$, ≤1.5 ns for charge state 45$^+$, 1.8 *4* ns for charge state 46$^+$, 5.9 *5* ns for charge state 47$^+$, 11.0 *25* ns for charge state 48$^+$ (1997At01).
144.78	11/2$^-$		Additional information 2.
321.1 *9*	9/2$^-$		
443.571 *13*	3/2$^+$	19.1 ps *6*	B(E2)↑=0.186 *5* (1975Ba04) g=+0.620 *58* (2009Ch59), +0.66 *18* (2007St24). $T_{1/2}$: Other: ≥3.5 ps (1975An16).
463.385 *13*	5/2$^+$	13.2 ps *5*	B(E2)↑=0.158 *5* (1975Ba04) g=+0.199 *25* (2009Ch59), +0.34 *9* (2007St24).
525.2 *10*	7/2$^-$		
538.3 *6*	(1/2$^+$)		
636.1 *10*	7/2$^+$		
642.2 *9*	7/2$^+$		
671.433 *11*	5/2$^+$	1.26 ps *6*	g=−0.03 *28* (2009Ch59) B(E2)↑=0.130 *4* (1975Ba04) $T_{1/2}$: Other: 0.9 ps *2* (Doppler-shift attenuation) (1974Er05).
729.272 *15*	3/2$^+$		B(E2)↑=0.0030 *18* B(E2)↑: Av of 0.0059 *8* (1975Ba04) and 0.0018 *5* (1975An16).
1017.8 *6*	7/2$^{(+)}$		$T_{1/2}$: 2009Ch59 suggest 9.0 ps *21* from observed cross section.
1029.4 *10*	9/2$^{(+)}$		$T_{1/2}$: 2009Ch59 suggest 23.0 ps *4* from observed cross section.
1053.8 *6*	3/2$^+$,5/2$^+$		
1066.5 *5*	3/2$^+$,5/2$^+$		
1133.1 *10*	3/2$^+$,5/2$^+$		

[†] From a least-squares fit by evaluators to the Eγ′s except for the 35 and 144 levels which are rounded-off values from Adopted Levels levels and are fixed in the least-squares adjustment.
[‡] From a least-squares fit by evaluators to Eγ′s.
[#] From the mean-life in 1975Ba04.
[@] From Adopted Levels.

Coulomb excitation 2009Ch59,1975Ba04,1975An16 **(continued)**

$\gamma(^{125}Te)$

E_γ	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	δ[&]	α[a]	Comments
176.3‡	2.0 *1*	321.1	9/2$^-$	144.78	11/2$^-$				
208.07† *2*	2.2 *2*	671.433	5/2$^+$	463.385	5/2$^+$				
227.89† *2*	1.1 *1*	671.433	5/2$^+$	443.571	3/2$^+$				
321.0‡	0.7 *2*	642.2	7/2$^+$	321.1	9/2$^-$				
346.3‡	0.9 *2*	1017.8	7/2$^{(+)}$	671.433	5/2$^+$				
380.4‡	1.1 *1*	525.2	7/2$^-$	144.78	11/2$^-$				
x388‡	0.6 *1*								
394.6‡	1.5 *1*	1066.5	3/2$^+$,5/2$^+$	671.433	5/2$^+$				
408.10† *2*	60 *1*	443.571	3/2$^+$	35.49	3/2$^+$	M1+E2	+1.35 *19*	0.0151	α(K)=0.0128; α(L)=0.00179; α(M)=0.00036 A_2=+0.442 *10* (1975Ba04).
427.90† *2*	99 *1*	463.385	5/2$^+$	35.49	3/2$^+$	M1+E2	−0.48 *4*	0.0137	α(K)=0.0118; α(L)=0.00152; α(M)=0.00030 A_2=−0.548 *10* (1975Ba04).
443.58† *2*	100 *1*	443.571	3/2$^+$	0.0	1/2$^+$	M1+E2	−2.55 *14*	0.0117	α(K)=0.0100; α(L)=0.00140; α(M)=0.00028 A_2=−126 *23* (1975Ba04).
463.40† *2*	36 *1*	463.385	5/2$^+$	0.0	1/2$^+$	E2		0.0102	α(K)=0.0086; α(L)=0.00122; α(M)=0.00025 A_2=+0.268 *12* (1975Ba04).
503.1‡	0.8 *1*	538.3	(1/2$^+$)	35.49	3/2$^+$				
528.6‡	1.2 *1*	1066.5	3/2$^+$,5/2$^+$	538.3	(1/2$^+$)				
538.4‡	1.4 *1*	538.3	(1/2$^+$)	0.0	1/2$^+$				
554.4‡	6.2 *1*	1017.8	7/2$^{(+)}$	463.385	5/2$^+$	D+Q	−0.14 *4*		Mult.: From angular correlation (2009Ch59).
566.0‡	6.7 *1*	1029.4	9/2$^{(+)}$	463.385	5/2$^+$	Q			Mult.: From angular correlation (2009Ch59).
574.2‡	15.4 *2*	1017.8	7/2$^{(+)}$	443.571	3/2$^+$	Q			Mult.: From angular correlation (2009Ch59).
590.4‡	0.7 *1*	1053.8	3/2$^+$,5/2$^+$	463.385	5/2$^+$				
600.6‡	10.4 *4*	636.1	7/2$^+$	35.49	3/2$^+$				
603.4‡	≈0.8	1066.5	3/2$^+$,5/2$^+$	463.385	5/2$^+$				
606.7‡	6.1 *2*	642.2	7/2$^+$	35.49	3/2$^+$				
610.2‡	1.8 *2*	1053.8	3/2$^+$,5/2$^+$	443.571	3/2$^+$				
622.9‡	1.2 *1*	1066.5	3/2$^+$,5/2$^+$	443.571	3/2$^+$				
x629‡	1.2 *1*								
635.90† *2*	56.9 *6*	671.433	5/2$^+$	35.49	3/2$^+$	D+Q	+0.32 *2*		Mult.: From angular correlation (2009Ch59).
671.42† *2*	13 *1*	671.433	5/2$^+$	0.0	1/2$^+$	(E2)		0.00375	α=0.00375; α(K)=0.00319; α(L)=0.00042
693.75† *2*	4.6 *1*	729.272	3/2$^+$	35.49	3/2$^+$	D+Q	+0.34 *+17−11*		Mult.: From angular correlation (2009Ch59).
x709‡	0.7 *1*								
x722‡	0.4 *2*								
729.30† *2*	1.0 *2*	729.272	3/2$^+$	0.0	1/2$^+$				

$^{125}_{52}Te_{73}$-2

Coulomb excitation **2009Ch59,1975Ba04,1975An16** **(continued)**

$\gamma(^{125}Te)$ (continued)

E_γ	I_γ[#]	E_i(level)	J_i^π	E_f	J_f^π
[x]755[‡]	0.9 *1*				
[x]772[‡]	1.0 *2*				
[x]885[‡]	0.8 *1*				
1018.4[‡]	0.7 *2*	1053.8	$3/2^+,5/2^+$	35.49	$3/2^+$
[x]1030[‡]	1.8 *2*				
1066.5[‡]	0.8 *1*	1066.5	$3/2^+,5/2^+$	0.0	$1/2^+$
1097.6[‡]	0.4 *1*	1133.1	$3/2^+,5/2^+$	35.49	$3/2^+$

[†] From 1975Ba04.
[‡] From 2009Ch59.
[#] From 2009Ch59.
[@] From Adopted Levels, unless otherwise noted.
[&] From 2009Ch59.
[a] 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.
[x] γ ray not placed in level scheme.

$^{125}_{52}Te_{73}$-3

Coulomb excitation 2009Ch59,1975Ba04,1975An16

Level Scheme

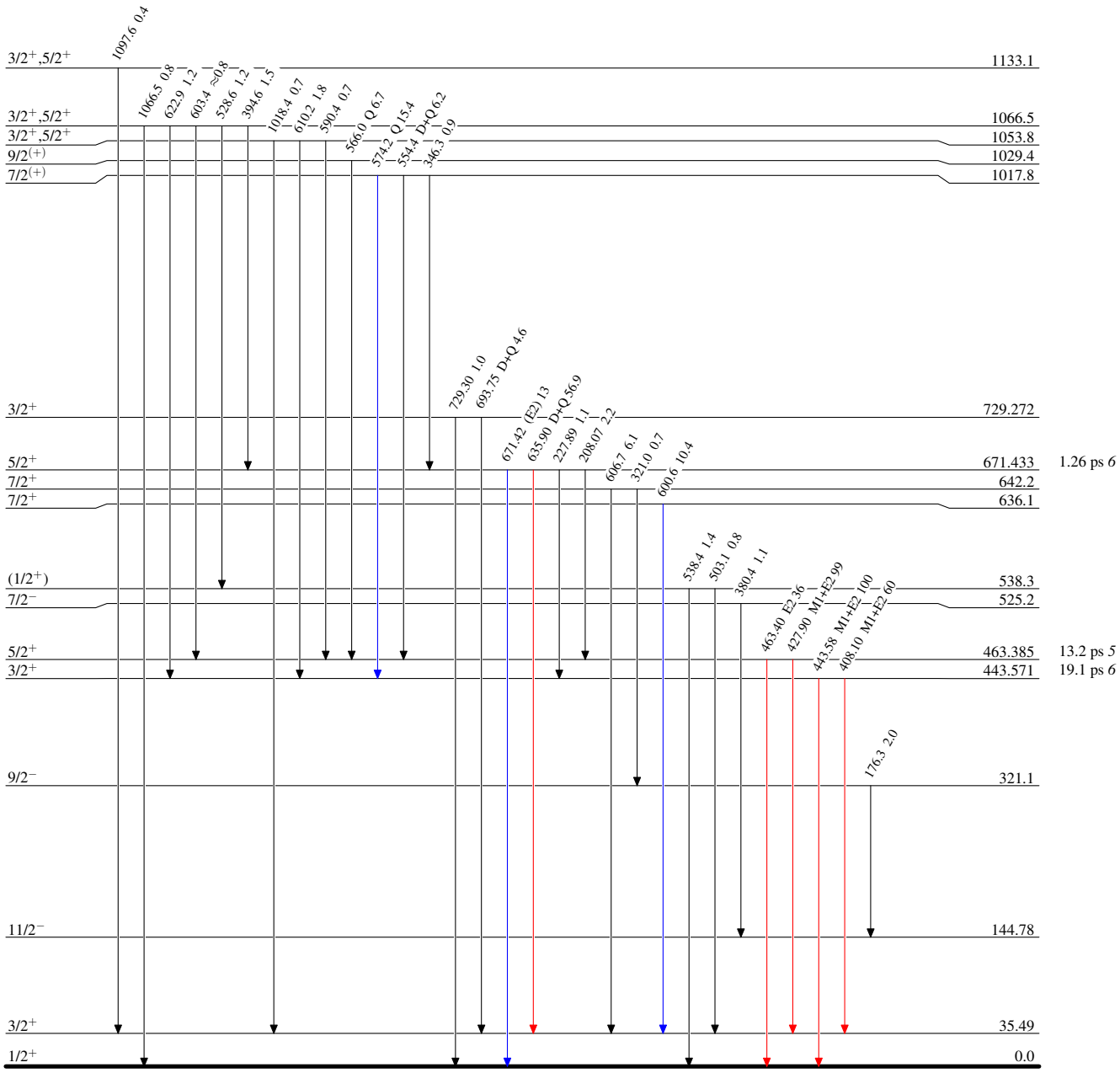
Intensities: Relative I_γ

Legend

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

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

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



$^{125}_{52}Te_{73}$