Coulomb excitation   1978Be10,1977Sa04,2007St24

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Zoltan Elekes and Janos Timar	NDS 129, 191 (2015)	28-Feb-2015

1978Be10: ^{128}Te(α,α') E=8-10 MeV, ^{128}Te(^{14}N,^{14}N$'$) E=32-37 MeV, ^{128}Te(^{16}O,^{16}O$'$) E=30.5-42 MeV; Si α, ^{14}N, ^{16}O; deduced B(E2) of first 2$^+$ by reorientation effect measurements.

1977Sa04: ^{128}Te(α,α'), (^{3}He,^{3}He$'$) E=8-19 MeV; Si α, ^{3}He, FWHM≈150 keV; DWBA analysis.

1975Kl07: ^{128}Te(α,α') E=8.5-17 MeV, ^{128}Te(^{16}O,^{16}O$'$) E=39-40 MeV; Si α, ^{16}O; deduced B(E2) of first 2$^+$ by reorientation effect measurement.

1974Ba45: ^{128}Te(α,α') E=10 MeV, ^{128}Te(^{16}O,^{16}O$'$) E=42 MeV; Si α, ^{16}O; deduced B(E2) of first 2$^+$ by reorientation effect measurements.

1963Ha20: ^{128}Te(α,α') E=14-20 MeV; Si-scintillator Ag(θ);

1981Sh15: ^{128}Te(^{32}S,^{32}S$'$) E≈80 MeV; transient field technique; scintillator γ, g(2$^+$)-factor deduced collective octupole states.

Others: 1956Te26, 1958St32, 1965Ro09, 1967St16, 1972KlZX.

2007St24: ^{128}Te(^{58}Ni,^{58}Ni$'\gamma$) E=195, ^{58}Ni beam used to excite states of interest. Beam provided by ANU 14UD Pelletron accelerator after passage through polarized Fe foil (0.08 Tesla field perpendicular to detection plane). Target at 90° K. Backscattered particles were detected using two silicon detectors, and γ rays were detected with pairs of Ge detectors. Measured g-factors by transient-field technique.

^{128}Te Levels

E(level)	J$^\pi$	T$_{1/2}$	Comments
0.0	0$^+$		
743.30 *10*	2$^+$	3.30 ps *3*	B(E2)↑=0.377 *3*; g=0.318 *13* T$_{1/2}$: calculated from B(E2) and α=0.00291. B(E2)↑: weighted average of 0.376 *3* (1978Be10), 0.380 *9* (1977Sa04), 0.378 *6* (1975Kl07), 0.387 *11* (1974Ba45); others: 0.280 *56* (1956Te26), 0.412 *33* (1958St32), 0.39 *3* (1967St16), 0.370 *5* (1972KlZX). g: from ^{58}Ni, $\gamma(\theta)$ (2007St24), other: 0.31 *4* from ^{32}S, $\gamma(\theta)$ (1981Sh15).
1497?	4$^+$		
1520? *20*	2$^+$		
2.44×10^3? *3*	3$^-$		E(level): from 1963Ha20; energy is in agreement with 2440 *20* in (α,α') (1967Le14).

$\gamma(^{128}$Te)

E$_\gamma$[†]	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$	Comments
743.30 *10*	743.30	2$^+$	0.0	0$^+$	
1700[‡] *30*	2.44×10$^{3?}$	3$^-$	743.30	2$^+$	E$_\gamma$: from 1963Ha20. Weak transition tentatively assigned as connecting 3$^-$ to 2$^+$ levels (1963Ha20).

[†] From 1978Be10, unless otherwise noted.

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

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Legend

Level Scheme

- - - - - - ▶ γ Decay (Uncertain)

3⁻ _ 2440

1700

743.30

2⁺ _____ 743.30   3.30 ps *3*

0⁺ _____ 0.0

$^{128}_{52}$Te$_{76}$