^{130}Te(d,t),(pol d,t) 2003Wi02

History

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

2003Wi02: E=24 MeV. Measured tritons, $\sigma(\theta)$, $A_y(\theta)$ using Q3D spectrograph and a long multiwire proportional counter at ten different angles. FWHM=5-6 keV. Analyzing powers determined from the cross sections with different polarizations. These analyzing powers were used for unambiguous spin assignment. DWBA calculations.

All data are from 2003Wi02. 1964Jo12 agrees with the results from 2003Wi02 but less precise and contains less data.

1964Jo12: E=14.8 MeV; magnetic spectrograph, $\sigma(\theta)$ θ=45° and 60°, enriched target.

Additional information 1.

^{129}Te Levels

Cross sections (in μb/sr) in terms of maximum value of $\sigma(\theta)$ distribution are given under comments.

E(level)[†]	J$^{\pi}$[‡]	L[‡]	(2J+1)S_{lj}.[#]	Comments
0.0	3/2$^+$	2	1.08	dσ/dΩ=7269 μb/sr.
105.2 *4*	11/2$^-$	5	3.020	dσ/dΩ=1340 μb/sr. E(level): 106 in (d,t).
179.35 *28*	1/2$^+$	0	0.524	dσ/dΩ=7749 μb/sr. E(level): 180 in (d,t).
544.06 *9*	5/2$^+$	2	0.007	dσ/dΩ=67 μb/sr. E(level): 545 in (d,t).
760.25 *5*	7/2$^-$	3	0.082	dσ/dΩ=151 μb/sr. E(level): 760.2 *3* in (d,t).
812.93 *8*	7/2$^+$	4	0.092	dσ/dΩ=60. E(level): 812.9 *3* in (d,t).
865.35 *12*	(7/2$^+$)	(4)	(0.032)	dσ/dΩ=16. E(level): 865.2 *3* in (d,t).
874.73 *21*		2	0.006	dσ/dΩ=51. (2J+1)S_{lj}.: 0.0046. E(level): 875.1 *3* in (d,t).
966.76 *4*	5/2$^+$	2	0.334	dσ/dΩ=3616. E(level): 966.7 *3* in (d,t).
1211.8 *6*	7/2$^+$	4	0.537	dσ/dΩ=365. E(level): 1211.5 *3* in (d,t).
1282.0 *5*	5/2$^+$	2	0.176	dσ/dΩ=2047. E(level): 1282.4 *3* in (d,t).
1303.32 *12*	1/2$^+$	0	0.002	dσ/dΩ=55. E(level): 1303.2 *3* in (d,t).
1319.01 *8*	7/2$^+$	4	0.021	dσ/dΩ=15. E(level): 1319.0 *3* in (d,t).
1419.4 *8*	5/2$^+$	2	0.035	dσ/dΩ=442. E(level): 1418.8 *3* in (d,t).
1483.56 *16*	7/2$^+$	4	0.091	dσ/dΩ=66. E(level): 1483.6 *3* in (d,t).
1582.1 *4*	7/2$^+$	4	0.049	dσ/dΩ=36. E(level): 1582.1 *3* in (d,t).
1599.65 *20*	5/2$^+$	2	0.005	dσ/dΩ=57. E(level): 1599.7 *3* in (d,t).
1655.72 *22*	5/2$^+$	2	0.169	dσ/dΩ=2204. E(level): 1656.0 *3* in (d,t).
1723.53 *5*	5/2$^+$	2	0.004	dσ/dΩ=46.
1739.72 *11*		2	0.002	dσ/dΩ=23. (2J+1)S_{lj}.: 0.0015.
1754.24 *9*	7/2$^+$	4	0.084	dσ/dΩ=57.

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^{130}Te(d,t),(pol d,t) 2003Wi02 (continued)

^{129}Te Levels (continued)

E(level)[†]	J^{π}[‡]	L[‡]	(2J+1)S_{lj}.[#]	Comments
1779.95 *13*	5/2$^+$	2	0.041	dσ/dΩ=559. E(level): 1779.9 *3* in (d,t).
1812.80 *25*	7/2$^+$	4	0.050	dσ/dΩ=37. E(level): 1812.7 *3* in (d,t).
1843.64 *15*		1+5		dσ/dΩ=16.
1869.91 *10*	5/2$^+$	2	0.025	dσ/dΩ=320.
1887.52 *25*		(1,2)		dσ/dΩ=14.
1918.7 *5*	(3/2$^+$)	(2)	(0.001)	dσ/dΩ=16.
2040.2 *6*	3/2$^-$	1	0.001	dσ/dΩ=29. $\nu 3p_{3/2}$ orbital. E(level): 2038.4 *3* in (d,t).
2059.31 *9*	1/2$^+$	0	0.001	dσ/dΩ=40.
2071.52 *9*	3/2$^+$	2	0.003	dσ/dΩ=40.
2089.90 *10*		(4)	(0.010)	(2J+1)S_{lj}.: 0.0062 ≈ dσ/dΩ=9.
2106.60 *7*	7/2$^-$	3	0.006	dσ/dΩ=55. $\nu 2f_{7/2}$ orbital. E(level): 2106.6 *3* in (d,t).
2113.91 *12*	1/2$^+$	0	0.004	dσ/dΩ=112.
2132.95 *10*		5	0.031	dσ/dΩ=11. (2J+1)S_{lj}.: 0.0172.
2141.81 *15*	7/2$^+$	4	0.023	dσ/dΩ=17.
2182.62 *8*	3/2$^+$	2	0.003	dσ/dΩ=40.
2197.7 *5*		(3)	≈0.007	dσ/dΩ=16. (2J+1)S_{lj}.: 0.0054 ≈
2220.15 *13*				dσ/dΩ=31.
2255.05 *25*	1/2$^+$	0	0.002	dσ/dΩ=65.
2266.61 *19*	(3/2$^+$)	(2)	≈0.004	dσ/dΩ=57.
2278.52 *13*	(7/2$^+$)	4	0.017	dσ/dΩ=14.
2303.7 *4*		5	0.037	dσ/dΩ=12. (2J+1)S_{lj}.: 0.0202.
2309.73 *7*	1/2$^+$	0	0.003	dσ/dΩ=86.
2316.60 *12*	(11/2$^-$)	5	0.041	dσ/dΩ=24.
2353.75 *23*	1/2$^+$	0	0.006	dσ/dΩ=199.
2362.6 *6*	(1/2$^-$)	1	0.001	dσ/dΩ=28.
2370.5 *5*	(3/2$^+$)	2	0.001	dσ/dΩ=20.
2377.4 *4*	(1/2$^-$)	1	0.001	dσ/dΩ=24.
2416.12 *7*	5/2$^+$	2	0.006	dσ/dΩ=94.
2431.59 *21*	1/2$^+$	0	0.001	dσ/dΩ=22.
2454.28 *13*		4	0.009	dσ/dΩ=7. (2J+1)S_{lj}.: 0.0057.
2465.29 *23*		(2)	≈0.001	dσ/dΩ=7. (2J+1)S_{lj}.: (0.0005).
2477.0 *4*		(2)	≈0.0010	dσ/dΩ=15. (2J+1)S_{lj}.: (0.0008).
2481.62 *29*		4	0.034	dσ/dΩ=28. (2J+1)S_{lj}.: 0.0221.
2506.66 *13*	(3/2$^+$)	2	0.002	dσ/dΩ=22.
2518.61 *16*	3/2$^+$	2	0.002	dσ/dΩ=23.
2555.75 *18*	5/2$^+$	2	0.003	dσ/dΩ=45.
2584.3 *3*	(3/2$^+$)	2	0.001	dσ/dΩ=14.
2615.91 *13*		(2)	≈0.001	dσ/dΩ=13. (2J+1)S_{lj}.: (0.0007).
2632.44 *33*	5/2$^+$	2	0.001	dσ/dΩ=22.
2670.86 *29*		(2)	≈0.0003	dσ/dΩ=5. (2J+1)S_{lj}.: (0.0003).

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^{130}Te(d,t),(pol d,t) 2003Wi02 (continued)

^{129}Te Levels (continued)

E(level)†	Jπ‡	L‡	(2J+1)S_{lj}.#	Comments
2680.6 *4*	9/2+	4	0.006	dσ/dΩ=9.
2701.8 *4*	1/2−	1	0.0003	dσ/dΩ=11.
2710.79 *28*	5/2+	2	0.002	dσ/dΩ=34.
2746.77 *16*		2	0.003	dσ/dΩ=42. (2J+1)S_{lj}.: 0.0024.
2756.74 *9*	(3/2+)	2	0.002	dσ/dΩ=33.
2766.62 *23*	(5/2+)	2	0.001	dσ/dΩ=19.
2823.60 *24*		4	0.019	dσ/dΩ=18. (2J+1)S_{lj}.: 0.0123.
2831.1 *6*	(3/2+)	(2)	≈0.001	dσ/dΩ=12.
2844.1 *5*		2	0.001	dσ/dΩ=6. (2J+1)S_{lj}.: 0.0004.
2855.67 *12*	5/2+	2	0.002	dσ/dΩ=36.

† The values are weighted averages of all the measurements at different angles with independent energy calibrations from ^{128}Te(d,p), ^{128}Te(pol d,p) and ^{130}Te(pol d,t). Quoted uncertainty is statistical. A systematic uncertainty of 0.5−5 keV increasing with excitation energy should be added in quadrature. From column 9 in Table 6 of 2003Wi02, these uncertainties are estimated as follows: 0.5 keV up to 2 MeV excitation; 1 keV from 2.0-2.2 MeV; 1.5 keV from 2.2-2.4 MeV; 2.0 keV from 2.4-2.5 MeV; 3 keV from 2.5-2.6 MeV; 4 keV from 2.6-2.8 MeV; 5 keV above 2.8 MeV.

‡ L from ^{128}Te(d,p), ^{128}Te(pol d,p) and/or ^{130}Te(pol d,t). J from L and analyzing power.

Authors give values with many significant digits, they have been rounded by evaluators in consideration of realistic uncertainties. Two values are given when spin is either L-1/2 or L+1/2; the value for the latter choice is given under comments.