Coulomb excitation 1974Le13,1970Le17,2001Ke08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Caroline D. Nesaraja, Scott D. Geraedts and Balraj Singh	NDS 111,897 (2010)	12-Jan-2010

E(α)=3-10 MeV (1962St02), E(^{12}C)=21-22 MeV, E(^{16}O)=25, 28, 30 MeV, E(^{32}S)=69.8 MeV (1970Le17); E(^{16}O)=35-60 MeV (1973Ch13), E(^{32}S)=70 MeV (1974Le13). Others: E(^{16}O)=34 MeV (1960Go08), E(^{14}N)=36 MeV (1960An07), E(^{14}N)=16-35 MeV and E(α)=7-9 MeV (1959Al95).

Measured: σ(E), γ (1962St02,1970Le17,1973Ch13), $\gamma(\theta)$ (1974Le13).

2004Yu10 (also 2005Ga15): ^{197}Au(^{58}Ni,^{58}Ni′γ), E=77.8 MeV/nucleon. Measured B(E2) for the first 2^+ state.

2001Ke08 (also 2001Ke02): Ta(^{58}Ni,^{58}Ni′γ), E=155,160 MeV. Measured lifetimes by DSAM and g factor and electric quadrupole moment of first 2^+ state.

Additional information 1.

Data for levels above 1454 are from 2001Ke08.

^{58}Ni Levels

E(level)†	J$^\pi$†	T$_{1/2}$‡	Comments
0.0	0^+		
1454.0	2^+	0.880 ps *14*	g=+0.038 *9* (2001Ke02) B(E2)↑=0.0704 *15* B(E2)↑: weighted average of 0.071 *15* (2004Yu10,2005Ga15), 0.0740 *18* from B(E2)/B(E2)(^{60}Ni)=0.783 *14* (1970Le17) and B(E2)(^{60}Ni)=0.0945 *15* (1993Ki10); 0.066 *4* (1973Ch13), 0.068 *2* (1971ChZF), 0.072 *7* (1962St02). Others: 0.063 *7* (1960Go08), 0.080 *16* (1960An07), 0.12 *3*, 0.10 *3* (1959Al95), T$_{1/2}$: 618 fs *13* from B(E2). Value from DSAM (2001Ke08) is much higher. ADOPTED T$_{1/2}$=0.652 ps *21* which includes all measurements related to lifetime determination (see Adopted Levels, Gammas dataset). Q=+0.076 *18* (2001Ke02), −0.10 *6* (1974Le13), −0.14 *10* (1971ChZF).
2459.1	4^+	3.7 ps *4*	
3037.6	2^+	75 fs *7*	
3263.4	2^+	53 fs *8*	

† From 'Adopted Levels'.

‡ From DSAM In Coulomb excitation (2001Ke08).

γ(^{58}Ni)

E$_\gamma$†	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
1004.8	2459.1	4^+	1454.0	2^+
1454.28	1454.0	2^+	0.0	0^+
1583.8	3037.6	2^+	1454.0	2^+
1809.5	3263.4	2^+	1454.0	2^+

† From Adopted Gammas.

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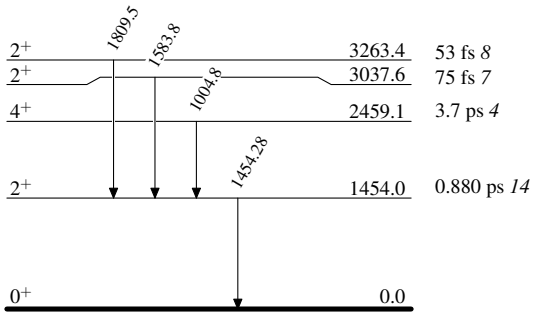
Level Scheme



$^{58}_{28}Ni_{30}$