^{58}Ni(^{6}Li,d),(pol ^{6}Li,D) 1977Fu03,1978Be25,1972Gu12

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Alan L. Nichols, Balraj Singh, Jagdish K. Tuli	NDS 113, 973 (2012)	15-Apr-2012

1972Gu12: E(^{6}Li)=38 MeV. Measured deuteron spectra, $\sigma(\theta)$ using split-pole magnetic spectrograph. DWBA analysis. Levels reported at 0, 960, (2880), 3180, 3870, 4040 and 4530.

1975Ju03: E(^{6}Li)=28 MeV. Measured deuteron spectra, $\sigma(\theta)$ at large angles (from 30° to 180° in c.m. system).

1977Fu03 (also 1975Fu02, 1977Be24, 1975An13): E(^{6}Li)=28 MeV. Measured deuteron spectra, $\sigma(\theta)$, magnetic spectrometer, FWHM=50-125 keV. DWBA analysis of $\sigma(\theta)$ data. Absolute cross sections accurate to 20%.

1978Be25: E(^{6}Li)=34 MeV. Measured deuteron spectra, $\sigma(\theta)$ using Q3D magnetic spectrograph, FWHM ≈ 60 keV.

1999Ei02, 1998Ve03: (pol ^{6}Li,d) E=34 MeV. Measured $\sigma(\theta)$ and analyzing powers for g.s. and first 2^+ state. ΔE-E Si telescopes. Detailed DWBA analysis of analyzing powers.

Additional information 1.

Data are taken mainly from 1977Fu03, except when noted otherwise.

Alpha cluster transfer reaction.

^{62}Zn Levels

E(level)†	L#	S(α)&	Comments
0@	0	1.00	L: 0 (1972Gu12,1978Be25). dσ/dΩ(50°)=1.0 μb/sr *2* (1972Gu12).
950@ *20*	2	0.36	Additional information 2. L: 2 (1972Gu12,1978Be25). S(α): other: 0.23 (1978Be25). dσ/dΩ(50°)=1.3 μb/sr *2* (1972Gu12).
1800 *20*	2	0.016	S(α): other: 0.004 (1978Be25). L: 2 (1978Be25). Additional information 3.
2190 *20*	4	0.055	Additional information 4. L: 4 (1978Be25). S(α): other: 0.04 (1978Be25).
2360 *20*	0	0.12	Additional information 5. L: 0 (1978Be25). S(α): other: <0.1 (1978Be25).
2740‡ *20*	(2,3,4)‡		
2840 *20*	2		Additional information 6. L: from $\sigma(\theta)$ in Fig. 13 of 1977Fu03; not listed in authors′ Table 10.
3190 *20*	3	0.39	Additional information 7. L: 3,4 (1972Gu12), 3 (1978Be25). S(α): other: 0.27 (1978Be25). dσ/dΩ(50°)=4.2 μb/sr *3* (1972Gu12).
3450‡	‡		J^{π}: 1977Fu03 assign 2^+ without giving an L value.
3540‡	(2)‡	(0.004)	
3680‡	(2)‡	(0.003)	
3870 *20*	1[a]	0.43	E(level): from 1972Gu12. Others: 3840 (1977Fu03), 3850 (1978Be25). L: (1) (1978Be25), 1 for 3870+4040 doublet (1975Ju03). S(α): other: 0.30 (1978Be25). dσ/dΩ(50°)=2.7 μb/sr *2* (1972Gu12).
4040 *20*	(1)[a]	0.50	E(level): from 1972Gu12. Others: 3990 (1977Fu03), 4030 (1978Be25). S(α),L: other: 0.10 for L=(5) (1978Be25). dσ/dΩ(50°)=5.0 μb/sr *3* (1972Gu12).
4530 *20*	6	0.20	E(level): from 1972Gu12. Others: 4490 (1977Fu03). dσ/dΩ(50°)=2.6 μb/sr *2* (1972Gu12).
4960	[b]		L: 4 in 1975Fu02, but not given in their later paper (1977Fu03). S(α): other: 0.10 for L=(5) (1978Be25).

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^{58}Ni(^{6}Li,d),(pol ^{6}Li,D) 1977Fu03,1978Be25,1972Gu12 (continued)

^{62}Zn Levels (continued)

E(level)[†]	L[#]	S(α)[&]
5090	1	0.15
5330	*b*	
5470	*b*	

[†] Uncertainty is given as 20 keV below 3 or 4 MeV excitation; larger uncertainty above this energy.
[‡] Weak group, no $\sigma(\theta)$ shown in figures.
[#] From DWBA analysis of $\sigma(\theta)$ distribution (1977Fu03). Same L values were reported for 0, 950, 2190, 3190, 3840, 3990, 4490 levels in their previous paper (1975Fu02).
[@] Analyzing powers measured (1999Ei02,1998Ve03).
[&] Relative values from DWBA, based on optical potential of 1975St05, and relative to S(g.s.)=1.00 (absolute value=0.20 for g.s.). Most values from 1978Be25 are ≈ 30% smaller relative to S(g.s.).
[*a*] Background due to carbon contamination prevented observation at small angles.
[*b*] No L value assigned in 1977Fu03 from measured $\sigma(\theta)$.