^{58}Ni(^{16}O,^{12}C) 1983Ok05,1978Be52,1971Fa12

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Huang Xiaolong, and Wang Xianghan	NDS 204,1 (2025)	30-Jun-2023

Alpha cluster transfer reaction.

1983Ok05: E=80 MeV, measured ^{12}C spectra, $\sigma(\theta)$ (14.5° to 39.75°) using ΔE-E Si counter telescopes. Effective finite range DWBA analysis at RCNP-AVF cyclotron facility.

1978Be52: E=46, 60 MeV. Measured ^{12}C spectra and $\sigma(\theta)$ from 3°−36°using Q3D magnetic spectrograph at the Saclay tandem accelerator. FWHM=60 keV. EFR-DWBA analysis of $\sigma(\theta)$ data.

1971Fa12: E=48 MeV, measured ^{12}C spectra using ΔE-E Si telescope, FWHM=250 keV at the Saclay tandem accelerator.

2005Al03: E=46 MeV. Measured ^{12}C spectra by ΔE-E telescope at the Sao Paulo 8UD Pelletron Accelerator; deals mainly with elastic scattering cross sections in ^{18}O and ^{16}O reactions, but also populates levels in one-, two- and four-particle transfer reactions including (^{16}O,^{12}C). Levels in ^{62}Zn are shown at 0, (0.95), 3.0, 4.4 and 7.0 MeV.

1975Wi07: E=60, 72, 81 MeV. Measured $\sigma(\theta)$ for g.s. at the Niels Bohr Institute tandem accelerator; deduced Q value and reaction mechanism.

Additional information 1.

^{62}Zn Levels

E(level)[†]	L[‡]	S(α)[#]	Comments
0	0	1	
950	2	0.21	S(α): 0.42 at 46 MeV, 0.40 at 60 MeV (1978Be52). Absolute spectroscopic factor=1.9 at 46 MeV, 4.3 at 60 MeV (1978Be25). E(level): other: 930 (1971Fa12).
1810			E(level): other: 1860 (1971Fa12).
2190		0.13	E(level): other: 2150 (1971Fa12).
2330			
2740			
2800			
3190 *20*	3	0.70	E(level): other: 3200 (1971Fa12,1983Ok05). S(α): 0.38 at 46 MeV, 0.55 at 60 MeV (1978Be52).
3880 *30*		0.55	E(level): others: 3800 (1971Fa12), 3880 (1983Ok05).
4050 *30*		0.19	E(level): other: 4050 (1983Ok05).
4540 *40*		0.22	E(level): others: 4540 (1983Ok05), 4620 (1971Fa12).
4750 *40*			
4890 *40*			
5090 *70*			
5270 *70*			
5410 *30*			E(level): others: 5380 (1971Fa12).
5580 *40*			
5790 *30*			E(level): other: 5780 (1971Fa12).
6030 *30*			
6300 *30*			
6610			E(level): level from 1971Fa12 only.

[†] Values below 3 MeV are from 1983Ok05; above this energy, values are from 1978Be52.

[‡] From 1978Be52.

[#] Relative values from 1983Ok05.