^{9}Be(^{32}Mg,^{30}Nepγ) 2010Fa04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia, A. Chakraborty	NDS 197,1 (2024)	31-May-2024

2010Fa04, 2007RoZY, 2006FaZX: ^{30}Ne was produced from ^{48}Ca primary beam fragmentation (E=140 MeV/nucleon) followed by 2p knockout reaction of ^{32}Mg secondary beam on ^{9}Be, E(^{32}Mg)=86.7, 99.7 MeV/nucleon at NSCL; Detector: segmented HPGe array, SeGA; Measured Eγ, deduced level scheme, inclusive cross section=0.22 mb *3*; shell model calculations. In 2006FaZX, a tentative 1090γ is placed from a tentative 4^{+} state at 1883 keV to 2^{+} state at 797 keV. This 1090γ is discarded in 2010Fa04.

2011FuZZ: ^{30}Ne production cross section 1.5$\times$10^{-5} mb (estimated value from Fig. 1) from a ^{48}Ca primary beam fragmentation (E=345 MeV/nucleon) on Be. Also yield 300 cps/100-pnA in 2009AoZZ.

2015MiZX: ^{1}H(^{30}Ne,^{30}Ne$'$), E=50 MeV/nucleon; measured thick target in-beam Eγ, Iγ, $\gamma\gamma$-coin using DALI2 array. Deduced σ for 2^{+}_{1} state of 37 mb *4*, deformation, deformation length.

Others: 2007RoZY, 2006FaZX.

All data are from 2010Fa04.

^{30}Ne Levels

Inclusive cross section=0.22 mb *3*.

E(level)	J$^{\pi}$†	Comments
0.0	0^{+}	
792 *4*	(2^{+})	
2235 *12*	(4^{+})	J$^{\pi}$: in addition to the comparison of the experimental level energy with the predicted level energy by shell model calculation, the properties of direct two-proton knockout from the 1d$_{5/2}$ level are used to constrain the data for the J^{π}=(4^{+}_{1}) assignment (2010Fa04).

† From 2010Fa04, based on comparison of the experimental level energy with the predicted level energy of shell model calculations.

γ(^{30}Ne)

E$_{\gamma}$	I$_{\gamma}$	E$_{i}$(level)	J$^{\pi}_{i}$	E$_{f}$	J$^{\pi}_{f}$
792 *4*	100	792	(2^{+})	0.0	0^{+}
1443 *11*	39 *12*	2235	(4^{+})	792	(2^{+})

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Level Scheme

Intensities: Relative I_γ