^{9}Be(^{38}Si,^{36}Mgγ) 2007Ga34

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	21-May-2021

Two-proton knockout reaction.
Identification of ^{36}Mg as a nuclide in the 'island of inversion'.
Primary beam: ^{48}Ca delivered by Coupled Cyclotron facility at the National Superconducting Cyclotron Lab. E=140 MeV/nucleon. Secondary beam: Produced in reaction ^{9}Be(^{48}Ca,X)^{38}Si. E=83 MeV/nucleon. A1900 fragment separator and S800 spectrograph used. γ rays were detected with Segmented Germanium Array of 32 HPGe detectors, with 14 detectors at 37° and 18 at 90°.

^{36}Mg Levels

E(level)	J^π	σ (mb)[†]	Comments
0[‡]	0^+	0.058 *9*	
660[‡] *6*	(2^+)	0.042 *8*	J^π: systematics, shell-model predictions (2007Ga34).

[†] Partial cross section.
[‡] Partial cross sections and wave functions are found to be dominated by intruder configurations as suggested by large-scale Monte Carlo shell-model calculations in the island of inversion.

γ(^{36}Mg)

E_γ	E_i(level)	J_i^π	E_f	J_f^π
660 *6*	660	(2^+)	0	0^+

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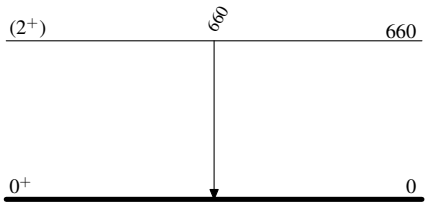
Level Scheme



$^{36}_{12}Mg_{24}$