

$^1\text{H}(^{85}\text{Ga},2\text{p}\gamma)$ 2017Sh42

Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	Balraj Singh	ENSDF	09-Sep-2022

2017Sh42: ≈ 270 MeV/nucleon secondary ^{85}Ga beam was obtained from $^9\text{Be}(^{238}\text{U},\text{F}),E=345$ MeV/nucleon primary reaction, using BigRIPS separator for selection of ion based on $B\rho-\Delta E-B\rho$ method at RIBF-RIKEN facility. For secondary reaction, 102-mm thick liquid hydrogen target was used which was surrounded by a time projection chamber (TPC). Measured $E\gamma$, $I\gamma$, $\gamma\gamma$ -coin, outgoing protons using DALI2 array of 186 NaI(Tl) detectors for γ radiation and MINOS device for protons. The γ spectra were Doppler corrected using the reaction kinematics information from the MINOS system. Comparison with shell-model calculations.

 ^{84}Zn Levels

$E(\text{level})^\dagger$	J^π^\ddagger	Comments
0	0^+	Configuration= $\pi f_{5/2}^2$ 0^+ (2017Sh42).
599# 20	(2^+)	
1444# 29	(4^+)	

† From $E\gamma$ values.

‡ As proposed by 2017Sh42, based on systematics of even-even nuclei, and shell-model calculations.

Configuration= $\pi f_{5/2}^2 \otimes \nu d_{5/2}^4$ 0^+ (2017Sh42).

 $\gamma(^{84}\text{Zn})$

E_γ^\dagger	I_γ^\ddagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π
599 20	38 7	599	(2^+)	0	0^+
845 21	11 3	1444	(4^+)	599	(2^+)

† From Doppler-corrected γ -spectra using reaction information from the MINOS system, and simulation of response of DALI2 array by GEANT4 (2017Sh42).





‡ In percent of detected (p,2p) reactions.

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Legend

Level Scheme

Intensities: Intensities in percent of (p,2p) reactions

-  $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
-  $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
-  $I_\gamma > 10\% \times I_\gamma^{\text{max}}$
-  Coincidence

