

${}^{238}\text{U}({}^{70}\text{Zn},\text{X}\gamma)$  2008Va08

Type	History		Literature Cutoff Date
	Author	Citation	
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**2008Va08:** E=460 MeV  ${}^{70}\text{Zn}$  beam provided by LNL Tandem-ALPI accelerator, bombarding a  ${}^{238}\text{U}$  target. CLARA-PRISMA setup was used to identify the projectile-like nuclei in coincidence with the prompt  $\gamma$  rays. PRISMA magnetic spectrometer detected products of multi- nucleon transfer reaction processes . Measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin using CLARA array of 22 Compton-suppressed Ge Clover detectors. Results are compared with large-scale shell-model calculations employing the GXPF1A, KB3G and  $fp_g$  effective interactions.

[Additional information 1.](#)

 ${}^{61}\text{Mn}$  Levels

In analogy with the lighter odd-even isotopes, 156 keV transition is proposed to feed  $5/2^-$  g.s. from low-lying  $7/2^-$  state.

E(level) <sup>†</sup>	$J^\pi$ <sup>‡</sup>	Comments
0.0	( $5/2^-$ )	$J^\pi$ : from systematics ( <a href="#">1985Ru05</a> ).
156.7 1	( $7/2^-$ )	
1034.6 4	( $9/2^-$ )	
1281.8 4	( $11/2^-$ )	

<sup>†</sup> From  $E_\gamma$  data.

<sup>‡</sup> As assigned by [2008Va08](#) based on systematics of odd-A Mn isotopes ( $A=57$  to  $63$ ) and shell-model predictions.

 $\gamma({}^{61}\text{Mn})$ 

$E_\gamma$ <sup>†</sup>	$I_\gamma$ <sup>†</sup>	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$
156.7 1	100 14	156.7	( $7/2^-$ )	0.0	( $5/2^-$ )
247.5 4	41 16	1281.8	( $11/2^-$ )	1034.6	( $9/2^-$ )
878.3 5	41 10	1034.6	( $9/2^-$ )	156.7	( $7/2^-$ )
1124.6 5	82 16	1281.8	( $11/2^-$ )	156.7	( $7/2^-$ )

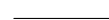


<sup>†</sup> From ( ${}^{61}\text{Mn}$  fragment) $\gamma$  coincidences.

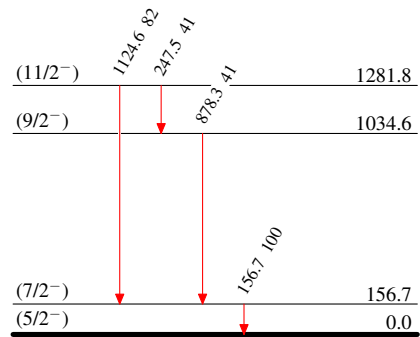
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## Level Scheme

Intensities: Relative  $I_\gamma$ 

## Legend

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

 ${}^{61}_{25}\text{Mn}_{36}$