

$^{112}\text{Cd}(\alpha,3n\gamma)$ **1979Ha12**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 111, 1471 (2010)	1-May-2009

Other: **1969Ya05**, E=40 MeV.

E=40 MeV. Measured $E\gamma$, $I\gamma$, $\gamma\gamma$ -coin, $\gamma(\theta)$, excit, E(ce), I(ce), **1979Ha12**.

 ^{113}Sn Levels

E(level)	J^π [‡]	E(level)	J^π [‡]	E(level)	J^π [‡]	E(level)	J^π [‡]
0.0	1/2 ⁺	2750.1 11	(15/2 ⁻)	3459.1 12	(23/2 ⁻)	4475.3 13	
77.7 10	7/2 ⁺	2807.4 12	19/2 ⁻ †	3681.2 12	23/2 ⁻	4715.3 12	(27/2 ⁻)
738.7 11	11/2 ⁻ †	2976.1 11	(17/2 ⁻)	3902.9 12	(23/2 ⁻)		
1907.4 11	15/2 ⁻ †	3092.1 12	19/2 ⁻	3972.7 12	(23/2 ⁻)		
1952.4 11	(13/2 ⁻)	3129.8 12	21/2 ⁻	4058.2 12			

† Proposed neutron h11/2 band. $\Delta J=2$ spacings correspond with ^{112}Sn , ^{114}Sn g.s. band up to 4⁺.

‡ Suggested by **1979Ha12** on the bases of angular distributions, $\alpha(K)\text{exp}$, and known J^π (g.s., 77 and 738 levels).

 $\gamma(^{113}\text{Sn})$

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.†	Comments
77.7		77.7	7/2 ⁺	0.0	1/2 ⁺		
85.5 3	4 2	4058.2		3972.7	(23/2 ⁻)		
226.0 3	4 2	2976.1	(17/2 ⁻)	2750.1	(15/2 ⁻)		
291.5 3	4 2	3972.7	(23/2 ⁻)	3681.2	23/2 ⁻		E_γ : The placement of this γ is not as in ($\alpha,2n\gamma$).
322.4 3	48 6	3129.8	21/2 ⁻	2807.4	19/2 ⁻	M1,E2	Mult.: $\alpha(K)\text{exp}=0.024$ 4.
329.3 3	20 3	3459.1	(23/2 ⁻)	3129.8	21/2 ⁻	M1,E2	Mult.: $\alpha(K)\text{exp}=0.025$ 6.
417.1 3	8 2	4475.3		4058.2			
551.4 3	6 2	3681.2	23/2 ⁻	3129.8	21/2 ⁻		E_γ : The placement of this γ is from the 3972 level in ($\alpha,2n\gamma$).
599.1 3	10 2	4058.2		3459.1	(23/2 ⁻)		
^x 617.8	15 3						
661.0 3	143 16	738.7	11/2 ⁻	77.7	7/2 ⁺	M2,E3	Mult.: $\alpha(K)\text{exp}=0.0088$ 12.
797.7 3	7 3	2750.1	(15/2 ⁻)	1952.4	(13/2 ⁻)		
810.8 3	9 3	3902.9	(23/2 ⁻)	3092.1	19/2 ⁻		
812.4 3	6 2	4715.3	(27/2 ⁻)	3902.9	(23/2 ⁻)		
842.9 3	17 3	3972.7	(23/2 ⁻)	3129.8	21/2 ⁻		
900.0 3	50 7	2807.4	19/2 ⁻	1907.4	15/2 ⁻	(E2) [‡]	
^x 1042.8	12 3						
1068.7 3	7 2	2976.1	(17/2 ⁻)	1907.4	15/2 ⁻		
1168.7 3	100	1907.4	15/2 ⁻	738.7	11/2 ⁻		
1184.7 3	13 2	3092.1	19/2 ⁻	1907.4	15/2 ⁻	(E2) [‡]	
1213.7 3	16 3	1952.4	(13/2 ⁻)	738.7	11/2 ⁻		

† From I(ce) and $I\gamma$ calibrated by means of known pure E2 transitions in adjacent even tin isotopes.

‡ $\gamma(\theta)$ typical of a J+2 to J transition.

^x γ ray not placed in level scheme.

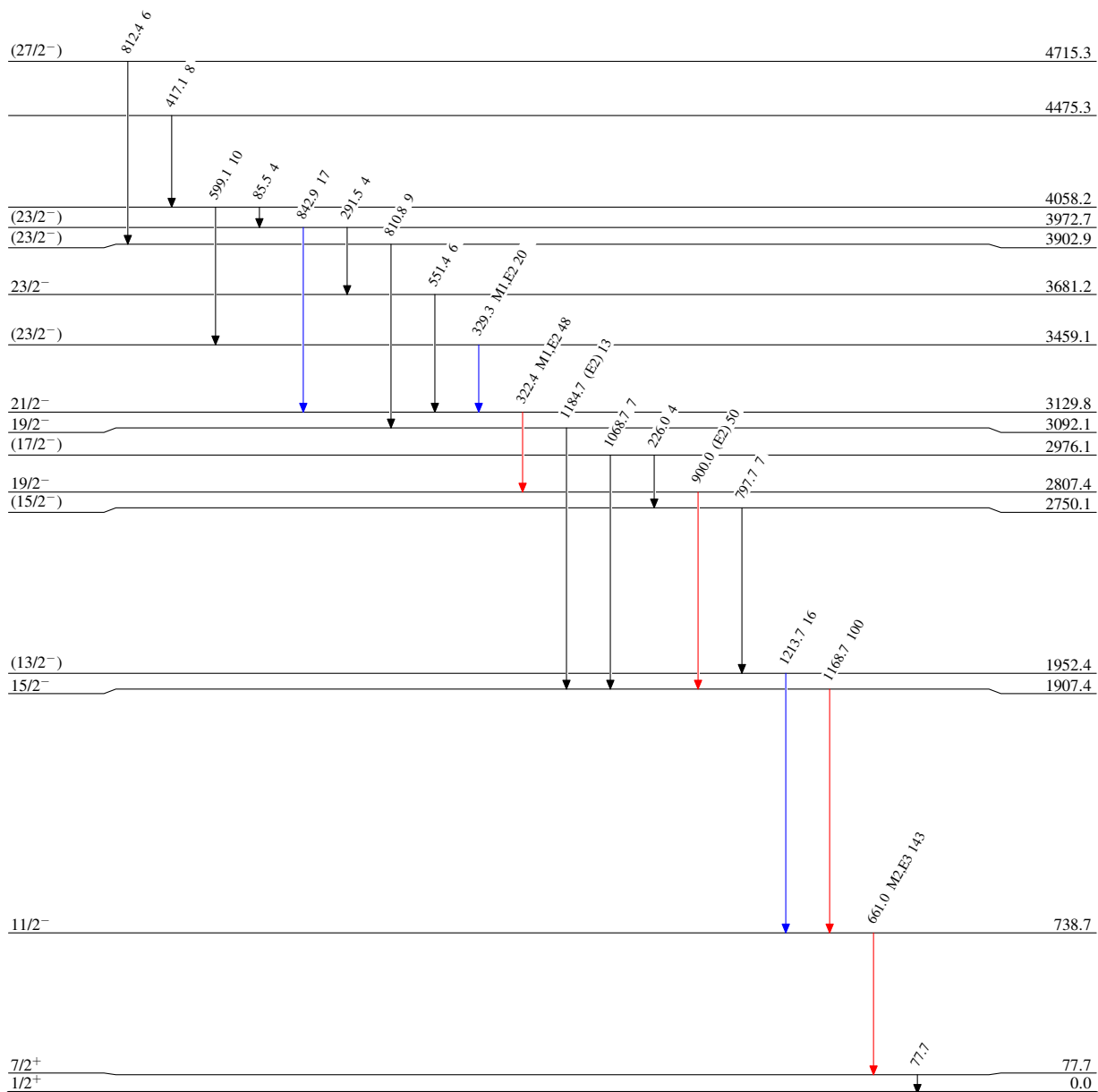
$^{112}\text{Cd}(\alpha,3n\gamma)$ 1979Ha12

Level Scheme

Intensities: Relative I_γ

Legend

- \blackrightarrow $I_\gamma < 2\% \times I_\gamma^{max}$
- $\color{blue}\blackrightarrow$ $I_\gamma < 10\% \times I_\gamma^{max}$
- $\color{red}\blackrightarrow$ $I_\gamma > 10\% \times I_\gamma^{max}$

 $^{113}_{50}\text{Sn}_{63}$