$$^{112}\text{Cd}(\gamma,\gamma') \quad \textbf{1971Mo31}$$

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Lalkovski, F. G. Kondev	NDS 124, 157 (2015)	1-Aug-2014

1971Mo31: Facility: Israel Research Reactor-2; Beam: monochromatic collimated γ from Fe(n,γ) reaction; Targets: 14 g/cm^2 and 2 g/cm^2 natural Cd; Detectors: two Ge(Li), one Nai(Tl); Measured: γ, γ-γ, γ-$\gamma(\theta)$ coinc., Eγ, Iγ; Deduced: ^{112}Cd levels, J$^\pi$, δ, Γ; Also, from the same collaboration: 1970Mo26.
Others: 1973Ar02, 1971Mo31, 1970Es01, 1969Ce02, 1969Mi13, 1968Mo06, 1967Pr15, 1967St33, 1966Mi13,

$$\underline{^{112}\text{Cd Levels}}$$

E(level)†	J$^{\pi\ddagger}$	T$_{1/2}$	Comments
0.0	0$^+$		
617.2 _8_	2$^+$		
1223.2 _12_	0$^+$		
1311.5 _17_	2$^+$		
1429$^\#$ _3_	0$^+$		
1467.8 _13_	2$^+$		
1869.7 _16_	0$^+$		
2000? _3_	3$^-$		
2081$^\#$ _4_	4$^+$		
2120.2 _16_	2$^+$		
2155.2 _16_	2$^+$		
2229.2 _16_	2$^+$		
2295$^\#$ _4_	0$^+$		
2506.2 _13_	1$^-$		J$^\pi$: doublet in the Adopted Levels.
2723.2 _16_	2$^+$		
2832.2 _23_	0$^+$		
2850.1 _18_	2$^+$		J$^\pi$: from $\gamma(\theta)$ and γ decay to 0$^+$ and 3$^-$ levels.
3110$^\#$ _6_	(2)$^+$		
3193$^\#$ _6_	(2)$^+$		
3247$^\#$ _6_	(1,2)$^+$		
3309$^\#$ _6_	(1$^-$,2)		
7632.3 _8_	1$^-$	5.3 fs _9_	E(level): Possible doublet structure with J^π=1$^+$ for the second state (1973Ar02). T$_{1/2}$: from Γ_γ=0.086 eV _15_ (1970Mo26). Others: 0.6 eV _+2−1_ (1966Mi13).

† From a least-squares fit to Eγ.
‡ From the Adopted Levels.
$^\#$ No secondary γ-rays from this level are reported in 1971Mo31.

$$\underline{\gamma(^{112}\text{Cd})}$$

E$_\gamma$†	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$	E$_\gamma$†	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$
606 _1_	1223.2	0$^+$	617.2	2$^+$	1468 _2_	1467.8	2$^+$	0.0	0$^+$
617 _1_	617.2	2$^+$	0.0	0$^+$	1503 _2_	2120.2	2$^+$	617.2	2$^+$
694$^\&$ _2_	2000?	3$^-$	1311.5	2$^+$	1538$^@$ _2_	2155.2	2$^+$	617.2	2$^+$
850$^@$ _2_	1467.8	2$^+$	617.2	2$^+$	1538$^@$ _2_	2850.1	2$^+$	1311.5	2$^+$
850$^@$ _2_	2850.1	2$^+$	2000?	3$^-$	1612 _2_	2229.2	2$^+$	617.2	2$^+$
1253 _2_	1869.7	0$^+$	617.2	2$^+$	1888 _2_	2506.2	1$^-$	617.2	2$^+$
1311 _2_	1311.5	2$^+$	0.0	0$^+$	2106 _2_	2723.2	2$^+$	617.2	2$^+$
1386$^\&$ _2_	2000?	3$^-$	617.2	2$^+$	^{x}2210 _4_				

$^{112}\text{Cd}(\gamma,\gamma')$　　　**1971Mo31** (continued)

$\gamma(^{112}\text{Cd})$ (continued)

E_γ[†]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[#]	Comments
2215 *3*		2832.2	0^+	617.2	2^+			
2507 *2*		2506.2	1^-	0.0	0^+			
2851 *3*		2850.1	2^+	0.0	0^+			
^{x}2935 *4*								
4323 *6*	0.2 *1*	7632.3	1^-	3309	$(1^-,2)$			
4385 *6*	0.5 *1*	7632.3	1^-	3247	$(1,2)^+$	E1		Mult.: A_2=0.4 *1* (1971Mo31).
4439 *6*	0.2 *1*	7632.3	1^-	3193	$(2)^+$	E1(+M2)	0.1 *5*	Mult.: A_2=0.16 *17* (1971Mo31).
4522 *6*	0.5 *1*	7632.3	1^-	3110	$(2)^+$	E1(+M2)	−0.01 *27*	Mult.: A_2=0.04 *18* (1971Mo31).
4782 *3*	1.9 *2*	7632.3	1^-	2850.1	2^+	E1(+M2)	+0.09 *12*	Mult.: A_2=0.11 *8* (1971Mo31).
4800 *3*	1.7 *1*	7632.3	1^-	2832.2	0^+	E1		Mult.: A_2=0.5 *1* (1971Mo31).
4909 *2*	0.2 *1*	7632.3	1^-	2723.2	2^+	[E1+M2]		
5126 *2*	0.4 *1*	7632.3	1^-	2506.2	1^-			
5337 *4*	0.5 *1*	7632.3	1^-	2295	0^+	[E1]		
5403 *2*	0.2 *1*	7632.3	1^-	2229.2	2^+	[E1+M2]		
5477 *2*	0.4 *1*	7632.3	1^-	2155.2	2^+	[M1+E2]		
5512 *2*	0.7 *1*	7632.3	1^-	2120.2	2^+	[M1+E2]		
5551 *4*	0.5 *1*	7632.3	1^-	2081	4^+	[E3]		
5763 *2*	11.6 *9*	7632.3	1^-	1869.7	0^+	E1		Mult.: A_2=0.51 *2* (1971Mo31).
6164 *2*	1.9 *2*	7632.3	1^-	1467.8	2^+	E1(+M2)	0.05 *10*	Mult.: A_2=0.08 *7* (1971Mo31).
6203 *3*	2.2 *2*	7632.3	1^-	1429	0^+	E1		Mult.: A_2=0.57 *7* (1971Mo31).
^{x}6345 *4*								E_γ: no final level exists for this primary transition reported in 1971Mo31.
6409 *2*	8.0 *6*	7632.3	1^-	1223.2	0^+	E1		Mult.: A_2=0.52 *4* (1971Mo31).
7015 *2*	11.7 *9*	7632.3	1^-	617.2	2^+	E1+M2	0.06 *2*	Mult.: A_2=0.09 *2* (1971Mo31).
7632 *1*	55 *4*	7632.3	1^-	0.0	0^+	E1		Mult.: A_2=0.51 *1* (1971Mo31).

[†] From 1971Mo31.
[‡] Branching ratios for the primary transitions in 1971Mo31; $\Delta I\gamma$=8% is quoted by the authors, but rounded to 1 by the evaluators for the cases where the the quoted uncertainty has higher precision than the given $I\gamma$ value.
[#] From 1971Mo31, based on $\gamma\gamma(\theta)$.
[@] Multiply placed.
[&] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

^{112}Cd(γ,γ')　　1971Mo31

Level Scheme

Intensities: Type not specified

Legend

$I_\gamma < \ 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)

$^{112}_{48}$Cd$_{64}$