

$^{122}\text{Sn}(^7\text{Li},6n\gamma)$ 2011Mo28

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 174, 1 (2021)	15-Apr-2021

2011Mo28: E=54 MeV ^7Li beam was produced from 14-UD Pelletron heavy-ion accelerator in the Australian National University.

Target was 3.5 mg/cm² self-supporting foil of ^{122}Sn . γ rays were detected with the CAESAR array consisting of 6

Compton-suppressed HPGe detectors and two LEPS detectors. Measured $E\gamma$, $I\gamma$, $\gamma\gamma$ -coin, $\gamma(t)$. Deduced levels, J, π , isomer $T_{1/2}$, band structures. Systematics of neighboring nuclei.

All data are from 2011Mo28, unless otherwise noted.

 ^{123}I Levels

E(level) [†]	J π [‡]	E(level) [†]	J π [‡]	$T_{1/2}$ ^{&}	E(level) [†]	J π [‡]
0.0 ^a	5/2 ⁺	2015.9 ^b 4	15/2 ⁺ #		3036.9 ^c 12	(21/2 ⁻)@
138.40 ^a 25	7/2 ⁺	2081.4 ^a 7	17/2 ⁺		3070.7 ^b 15	21/2 ⁺ #
641.10 ^a 25	9/2 ⁺	2361.7 ^b 4	17/2 ⁺ #		3392.4 ^a 11	23/2 ⁺
972.4 ^a 4	11/2 ⁺	2500.4 ^a 8	19/2 ⁺		3460.9 ^c 15	(23/2 ⁻)@
1315.5 ^a 4	13/2 ⁺	2659.9 ^c 5	(19/2 ⁻)@	24 ns 3	3916.9 ^c 18	(25/2 ⁻)@
1602.2 ^b 4	13/2 ⁺ #	2671.7 ^b 11	19/2 ⁺ #			
1690.3 ^a 4	15/2 ⁺	2936.4 ^a 10	21/2 ⁺			

[†] From a least-squares fit to γ -ray energies, assuming $\Delta E\gamma=0.3$ keV for values quoted to nearest tenth keV and $\Delta E\gamma=1$ keV for those quoted to keV.

[‡] Proposed by 2011Mo28 based on band structures and adopted assignments for low-lying states.

Based on $J^\pi(1602)=13/2^+$ proposed by 2011Mo28, while adopted $J^\pi(1602)=(15/2^+)$. These assignments are not adopted in Adopted Levels.

@ Based on $J^\pi(2660)=(19/2^-)$ proposed by 2011Mo28, while adopted $J^\pi(2660)=(21/2^+)$. These assignments are not adopted in Adopted Levels.

& From $\gamma(t)$.

^a Band(A): Band 1, $\pi g_{9/2}$.

^b Band(B): Band 2.

^c Band(C): Band 3.

 $\gamma(^{123}\text{I})$

E_γ	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π
138.4	47 5	138.40	7/2 ⁺	0.0	5/2 ⁺	456		3392.4	23/2 ⁺	2936.4	21/2 ⁺
298.2		2659.9	(19/2 ⁻)	2361.7	17/2 ⁺	456		3916.9	(25/2 ⁻)	3460.9	(23/2 ⁻)
310		2671.7	19/2 ⁺	2361.7	17/2 ⁺	502.7	49 5	641.10	9/2 ⁺	138.40	7/2 ⁺
331.3	100	972.4	11/2 ⁺	641.10	9/2 ⁺	629.8	19 2	1602.2	13/2 ⁺	972.4	11/2 ⁺
343.1	56 6	1315.5	13/2 ⁺	972.4	11/2 ⁺	641.1	66 7	641.10	9/2 ⁺	0.0	5/2 ⁺
345.8	43 4	2361.7	17/2 ⁺	2015.9	15/2 ⁺	671.4	76 8	2361.7	17/2 ⁺	1690.3	15/2 ⁺
374.8	57 5	1690.3	15/2 ⁺	1315.5	13/2 ⁺	674.4	14 2	1315.5	13/2 ⁺	641.10	9/2 ⁺
377		3036.9	(21/2 ⁻)	2659.9	(19/2 ⁻)	700.4	12 1	2015.9	15/2 ⁺	1315.5	13/2 ⁺
391		2081.4	17/2 ⁺	1690.3	15/2 ⁺	717.9	21 2	1690.3	15/2 ⁺	972.4	11/2 ⁺
399		3070.7	21/2 ⁺	2671.7	19/2 ⁺	766		2081.4	17/2 ⁺	1315.5	13/2 ⁺
413.7	23 2	2015.9	15/2 ⁺	1602.2	13/2 ⁺	810		2500.4	19/2 ⁺	1690.3	15/2 ⁺
419		2500.4	19/2 ⁺	2081.4	17/2 ⁺	855		2936.4	21/2 ⁺	2081.4	17/2 ⁺
424		3460.9	(23/2 ⁻)	3036.9	(21/2 ⁻)	892		3392.4	23/2 ⁺	2500.4	19/2 ⁺
436		2936.4	21/2 ⁺	2500.4	19/2 ⁺	961.1	4.0 4	1602.2	13/2 ⁺	641.10	9/2 ⁺

[†] Intensities are normalized to $I(331.3\gamma)=100$.

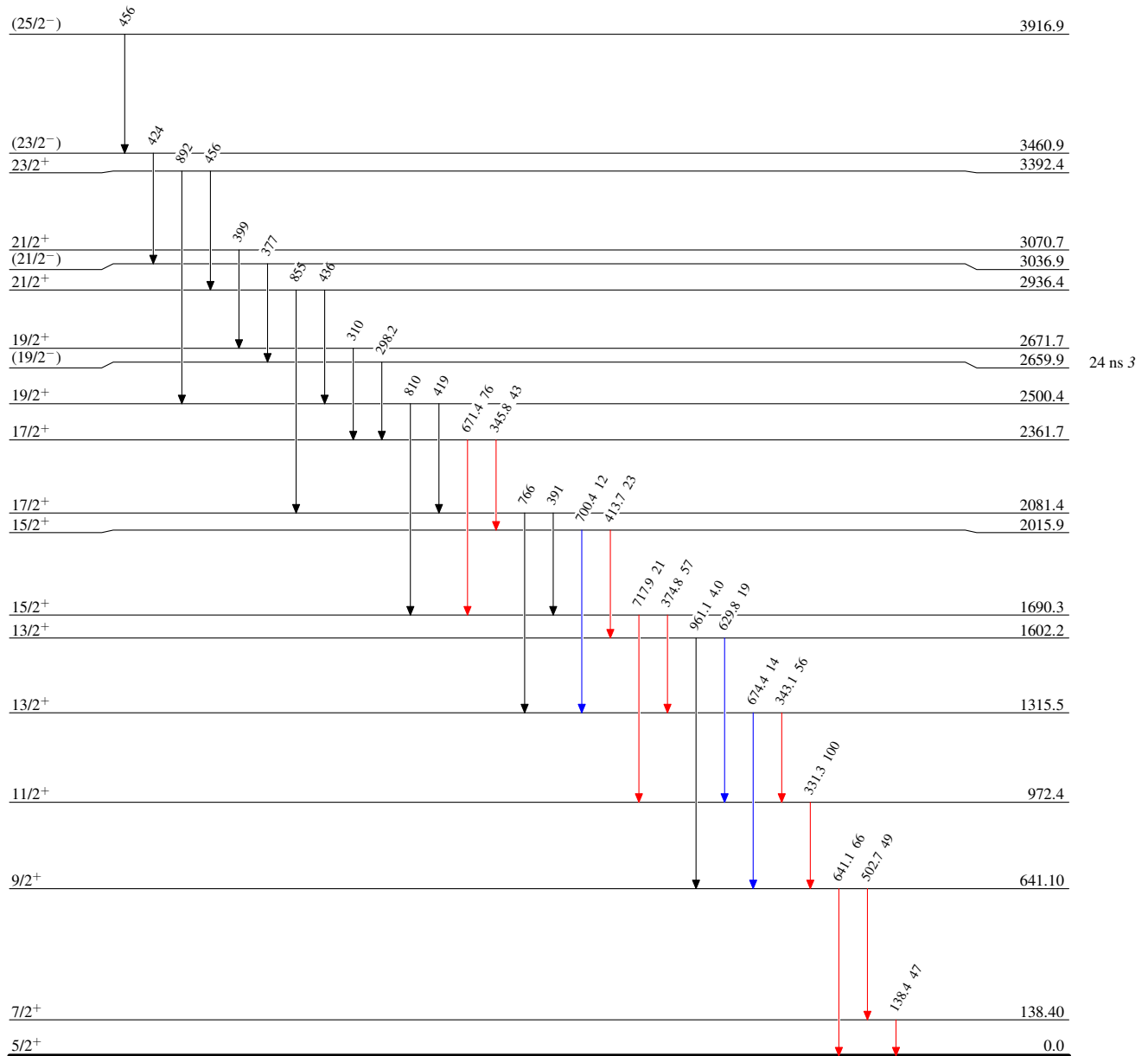
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Level Scheme

Intensities: Relative I_γ

Legend

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

 $^{123}_{53}\text{I}_{70}$

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