
 $^{107}\text{Sn } \epsilon \text{ decay (2.90 min)}$ **1976Hs01,1976BuZF**

Type	Author	History
Full Evaluation	Jean Blachot	Citation
		NDS 109, 1383 (2008)

Parent: ^{107}Sn : E=0.0; $J^\pi=(5/2^+)$; $T_{1/2}=2.90$ min 5; $Q(\epsilon)=4980$ 80; % $\epsilon+\beta^+$ decay=100.0Others: [1972Ri16](#), [1976VaYY](#).

Partial decay scheme; level intensity balance not determined.

 $^{107}\text{In Levels}$

E(level)	$J^\pi \ddagger$	$T_{1/2}$	E(level)	$J^\pi \ddagger$	E(level)	$J^\pi \ddagger$
0.0	$9/2^+$		1396	$(5/2^+)$	1910	—
678.6	$1/2^-$	50.4 s 6	1423	$(9/2)^+$	2315 [†]	
1001.3	$11/2^+$		1491	$(3/2)^+$	2465 [†]	
1107	$(3/2^-)$		1542	+	3223 [†]	
1129	$(5/2)^+$		1808			
1167	$(1/2)^+$		1865	—		

[†] Tentative from $E\gamma$ fits.[‡] From Adopted Levels.

 $\gamma(^{107}\text{In})$

Except as noted, $E\gamma$, $I\gamma$ are from semi γ -singles ([1976BuZF](#)), with sources from $^{106}\text{Cd}(\alpha,3n)$, $^{106}\text{Cd}(^3\text{He},2n)$. ΔE : Uncertainties 0.5 to 2 keV ([1976BuZF](#)). $\Delta I\gamma$: Uncertainties 10% to 30% ([1976BuZF](#)).Placement based on $\gamma\gamma$ -coin via (d,n γ) for E(levels)<2 MeV.

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	Comments
362.0 [#]		1491	$(3/2)^+$	1129	$(5/2)^+$		E_γ : other: 361.6 3 (d,n γ).
^x 377.1 [#]							
421.8 [#]	4.9 CA	1423	$(9/2)^+$	1001.3	$11/2^+$		E_γ : other: 422.1 3 (d,n γ). I_γ : from branching: $I\gamma(422\gamma)/I\gamma(1423\gamma)=0.51$ 9 (d,n γ).
428.5 [#]		1107	$(3/2^-)$	678.6	$1/2^-$		E_γ : other: 428.5 3 (d,n γ).
488.5 [#]		1167	$(1/2)^+$	678.6	$1/2^-$		E_γ : other: 487.6 4 (d,n γ).
^x 571	2.7						
^x 596	1.8						
^x 610.5 [#]	2.7						E_γ : other: 610 (1976BuZF).
^x 625.0 [#]							
678.6 4	100 17	678.6	$1/2^-$	0.0	$9/2^+$	M4	E_γ : from 1972Ri16 . Other: 678.8 (1976Hs01). I_γ : from 1972Ri16 , 1976BuZF , could be erroneous because equilibrium. $T_{1/2}(\text{Parent})/(isomer})=3.5$.
^x 696.5 [#]							
^x 736	3.9						
758	3.0	1865	—	1107	$(3/2^-)$		E_γ : other: 757.4 5 (d,n γ).
803	6.3	1910	—	1107	$(3/2^-)$		E_γ : other: 803.4 6 (d,n γ).
^x 836.5 [#]							
^x 888.0 [#]							
917	2.7	2315		1396	$(5/2)^+$		
^x 981.5 [#]	3.0						E_γ : other:≈977 (1976BuZF).

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 ^{107}Sn ε decay (2.90 min) 1976Hs01, 1976BuZF (continued)

 $\gamma(^{107}\text{In})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J^π_i	E_f	J^π_f	Comments
		1001.3	11/2 ⁺	0.0	9/2 ⁺	
1001.3	3	29 5				
$x\approx 1048$		2.3				
1071	3.2	2465		1396	(5/2 ⁺)	
$x 1085$	1.2					E_γ : may correspond with doublet $E_\gamma=1084.3, 1087.8$ (1976Hs01).
$x 1110$	1.9					I_γ : from 1972Ri16. Other: 22 (1976BuZF).
$x 1129.0^{\#}$	100	1129	(5/2) ⁺	0.0	9/2 ⁺	E_γ : others: 1128.3 4 (1972Ri16), 1129.2 4 (d,ny).
$x 1167$	1.8					
$x 1174.0^{\#}$	4.4					E_γ : other: 1172 (1976BuZF).
1186	12.5	2315		1129	(5/2) ⁺	
$x 1217$	2.2					
$x 1310$	1.6					
1335	1.7	2465		1129	(5/2) ⁺	
1358	6.5	3223		1865	—	
$x 1383$	1.3					
1396	20.7	1396	(5/2 ⁺)	0.0	9/2 ⁺	E_γ : other: 1396.0 5 (d,ny).
1424	9.6	1423	(9/2) ⁺	0.0	9/2 ⁺	E_γ : other: 1423.1 5 (d,ny).
$x 1445$	2.6					
$x 1473$	4.8					
1542	30	1542	+	0.0	9/2 ⁺	E_γ : other: 1540.6 5 (d,ny).
$x \approx 1581$	1.5					
$x 1704$	6.1					
1732	2.9	3223		1491	(3/2) ⁺	
1808	25	1808		0.0	9/2 ⁺	
1911	4.9	1910	—	0.0	9/2 ⁺	
$x 1936$	1.5					
$x \approx 1944$	0.9					
$x 1963$	2.8					
$x 2004$	8.0					
$x 2041$	0.8					
$x 2063$	7.5					
2094	8.8	3223		1129	(5/2) ⁺	
2116	9.9	3223		1107	(3/2 ⁻)	
$x 2186$	1.9					
$x 2216$	7.6					
$x 2302$	4.1					
2316	5.7	2315		0.0	9/2 ⁺	
$x 2379$	0.9					
$x 2448$	1.0					
≈ 2465	1.0	2465		0.0	9/2 ⁺	
$x 2483$	0.9					
2547	10	3223		678.6	1/2 ⁻	
$x 2570$	1.4					
$x 2644$	0.9					
$x 2650$	0.9					
$x 2659$	0.9					
$x 2673$	1.7					
$x 2716$	1.9					
$x 2825$	13					
$x 2858$	1.1					
$x 3060$	6.7					
$x 3112$	2.1					
$x 3130$	0.7					
$x 3136$	0.5					
$x 3202$	1.1					
$x 3206$	1.2					

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 ^{107}Sn ε decay (2.90 min) 1976Hs01, 1976BuZF (continued)

 $\gamma(^{107}\text{In})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	E_f	J^π_f	E_γ	I_γ	$E_i(\text{level})$	E_γ	I_γ	$E_i(\text{level})$
x3218	0.6				$^x\approx 3375$	0.6		x3494	0.4	
3225	0.4	3223		0.0 $9/2^+$	x3431	0.2		x3512	0.2	
x3325	2.9				x3441	0.2		x3592	0.8	
$^x\approx 3361$	0.6				x3450	0.9				

[†] Uncertainties 0.5 to 2 keV (1976BuZF).

[‡] Uncertainties 10% to 30% (1976BuZF).

From 1976Hs01; ΔE and I_γ not given in partial study of γ spectrum of mixed ^{106}Sn , ^{107}Sn source produced by 30-MeV ^3He on ^{106}Cd .

^x γ ray not placed in level scheme.

$^{107}\text{Sn} \epsilon$ decay (2.90 min) 1976Hs01,1976BuZFDecay Scheme

Legend

Intensities: Type not specified

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

$(5/2^+)$ 0.0 2.90 min 5
 $\% \epsilon + \% \beta^+ = 100$
 $Q_\epsilon = 4980.80$
 $^{107}_{50}\text{Sn}_{57}$

