

^{138}Sn IT decay (210 ns) 2014Si18

Type	Author	History Citation	Literature Cutoff Date
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Parent: ^{138}Sn : E=1344 2; $J^\pi=(6^+)$; $T_{1/2}=210$ ns 45; %IT decay=100.0

2014Si18: ^{138}Sn ions were produced in fission of 345 MeV/nucleon ^{238}U beam by ^9Be target at RIBF-RIKEN facility. Fragments were identified by BigRIPS separator based on ΔE -ToF- $B\rho$ method. The selected fragments of ^{138}Sn were transported through ZeroDegree magnetic spectrometer and implanted in WAS3ABI detector array of Si-strip detectors for β and ion detection. The γ rays were detected by an array of 12 large-volume Ge Cluster detectors of EUROBALL array. Measured delayed $E\gamma$, I_γ , (^{138}Sn ions) γ -coin, $\gamma\gamma$ -coin, isomer half-life. Comparison with shell-model calculations.

 ^{138}Sn Levels

E(level) [†]	J^π [‡]	$T_{1/2}$	Comments
0	0^+		
715 1	(2^+)		
1176 2	(4^+)		
1344 2	(6^+)	210 ns 45	%IT=100 $T_{1/2}$: from a least-squares fit to the summed time distributions for the 168 γ , 461 γ and 715 γ (2014Si18). Dominant $\nu f_{7/2}^2$ configuration.

[†] From $E\gamma$.

[‡] From shell-model predictions (2014Si18) and systematics of even-even semi-magic nuclei.

 $\gamma(^{138}\text{Sn})$

E_γ [†]	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	α [‡]
168 1	121 29	1344	(6^+)	1176	(4^+)	[E2]	0.255 7
461 1	83 31	1176	(4^+)	715	(2^+)	[E2]	0.0093
715 1	100 33	715	(2^+)	0	0^+	[E2]	0.0028

[†] From 2014Si18.

[‡] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ -ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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Decay Scheme

Intensities: Relative I_γ
%IT=100.0

Legend

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

