

^{108}Nb IT decay (0.109 μs) [2012Ka36](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	20-Jul-2015

Parent: ^{108}Nb : E=166.6 5; $T_{1/2}$ =0.109 μs 2; %IT decay=100.0

Isomer in ^{108}Nb discovered in $^9\text{Be}(^{238}\text{U},\text{X})$ reaction.

[2012Ka36](#): ^{238}U beam at E=345 MeV/nucleon provided by the RIBF accelerator complex at RIKEN facility incident on ^9Be target.

Fission fragments were separated and analyzed by BigRIPS separator, transported to focal plane of ZeroDegree spectrometer and finally implanted in an aluminum stopper. Particle identification was achieved by ΔE -tof-B ρ method. Delayed gamma rays from microsecond isomers were detected by three clover-type HPGe detectors. Measured E_γ , I_γ , $\gamma\gamma$ -coin, isomer half-life. Deduced levels.

 ^{108}Nb Levels

E(level)	J^π	$T_{1/2}$	Comments
0	(2 ⁺)		J^π : from Adopted Levels.
64.3 5			
77.6 5			
166.6 5	(4 ⁻ ,5)	0.109 μs 2	Number of implanted fragments= 2.7×10^6 . J^π : assigned by 2012Au07 based on decay pattern. $T_{1/2}$: from $\gamma(t)$ method (2012Ka36).

 $\gamma(^{108}\text{Nb})$

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [†]	α^\ddagger
(14)		77.6		64.3			
64.3 5	1.6 4	64.3		0	(2 ⁺)		
77.6 5	100 2	77.6		0	(2 ⁺)	D	
89.0 5	56 1	166.6	(4 ⁻ ,5)	77.6		(E2)	1.77 4
102.2 5	19 1	166.6	(4 ⁻ ,5)	64.3			

[†] From intensity balance.

[‡] 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

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

