

Ta($^{86}\text{Kr}, X\gamma$) 2002MaZN

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 151, 1 (2018)	1-Apr-2018

^{59}Ti produced in the fragmentation of 57.8 MeV/nucleon ^{86}Kr beam impinged on 50 mg/cm² thick tantalum target using LISE-2000 spectrometer at GANIL facility. Detector system included a three-element Si-detector telescope containing a double-sided silicon-strip detector (DSSSD) backed by a Si(Li) detector and surrounded by four clover type EXOGAM Ge detectors. Product identified by mass, atomic number, charge, energy loss and time of flight. Measured half-life.

 ^{59}Ti Levels

E(level)	J^π [†]	$T_{1/2}$	Comments
0.0	(5/2 ⁻)	27.5 ms 25	$T_{1/2}$: based on time correlation between implantation and β -ray events in the DSSSD. Fitting procedure included five parameters: β -detection efficiency, background rate, mother, daughter and grand-daughter half-lives (2002MaZN, 2011Da08).
114 2 699 1	(1/2 ⁻) 9/2 ⁺	600 ns 50 \approx 70 ns	$T_{1/2}$: from $\gamma(t)$ (2002MaZN). E(level), J^π : Proposed [M2] isomer feeding the 5/2 ⁻ state. If 1st excited state were considered to be 5/2 ⁻ , then level energy would be 813 keV (2002MaZN). Not mentioned/discussed in primary publication (2011Da08) of 2002MaZN work. Not adopted by evaluator. $T_{1/2}$: from $\gamma(t)$ (2002MaZN).

[†] From Adopted Levels, except otherwise noted.

 $\gamma(^{59}\text{Ti})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	Comments
114 2 699 1	114 699	(1/2 ⁻) 9/2 ⁺	0.0 0.0	(5/2 ⁻) (5/2 ⁻)	[E2] [M2]	E_γ : Could not perform γ - γ coincidence for placement. Not adopted by evaluator. Not mentioned/discussed in primary publication (2011Da08) of 2002MaZN work.

Ta($^{86}\text{Kr}, X\gamma$) 2002MaZNLevel Scheme