^{73}Ge IT decay (0.499 s) 1974Bu14

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 158, 1 (2019)	16-May-2019

Parent: ^{73}Ge: E=66.722 *10*; $J^\pi=1/2^-$; $T_{1/2}$=0.499 s *11*; %IT decay=100.0

1974Bu14: ^{73}Ge isomers were produced by neutron irradiation of Ge(Li) detectors via ^{74}Ge(n,2n) at the fast-neutron facility at the University of Colorado. Measured Eγ, Iγ, γ(t). Deduced isomer $T_{1/2}$.

1978Ta08: ^{73}Ge isomers were produced by neutron irradiation of two planar Ge detectors with the LAN neutron generator at Groningen. Measured delayed-coincidence summing. Deduced $T_{1/2}$.

Other: 1992Sh16, 1981Ch41.

^{73}Ge Levels

E(level)[†]	J^π[‡]	$T_{1/2}$	Comments
0.0	$9/2^+$		
13.2845 *15*	$5/2^+$	2.88 μs *7*	E(level): from measured Eγ=66.59 *6* for the observed sum-peak 13.06γ+53.53γ and Eγ=53.53 *6* in 1974Bu14. $T_{1/2}$: from delayed-coincidence summing in 1978Ta08.
66.722 *10*	$1/2^-$	0.499 s *11*	E(level): from measured Eγ=66.59 *6* for the observed sum-peak 13.06γ+53.53γ (1974Bu14). $T_{1/2}$: from γ(t) in 1974Bu14.

[†] From Eγ.
[‡] From Adopted Levels.

$\gamma(^{73}Ge)$

E$_\gamma$[†]	I$_\gamma$[‡@]	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.[#]	α[&]	I$_{(\gamma+ce)}$[@]	Comments
13.2845 *15*	0.094 *CA*	13.2845	$5/2^+$	0.0	$9/2^+$	E2	1063	100	ce(K)/(γ+ce)=0.281 *5*; ce(L)/(γ+ce)=0.626 *8*; ce(M)/(γ+ce)=0.0907 *18* ce(N)/(γ+ce)=0.00144 *3* α(K)=299 *5*; α(L)=666 *10*; α(M)=96.5 *14* α(N)=1.529 *22* E$_\gamma$: not observed due to noise and background but expected to be as intense as 53.53γ (1974Bu14).
53.437 *9*	10.67 *CA*	66.722	$1/2^-$	13.2845	$5/2^+$	M2	8.42	100	ce(K)/(γ+ce)=0.764 *6*; ce(L)/(γ+ce)=0.1119 *20*; ce(M)/(γ+ce)=0.0170 *4* ce(N)/(γ+ce)=0.000983 *19* α(K)=7.20 *10*; α(L)=1.054 *15*; α(M)=0.1601 *23* α(N)=0.00926 *13* E$_\gamma$: 53.53 *6* from 1974Bu14.

[†] From ^{73}As ε decay. Values from this study are given in comments.
[‡] From I(γ+ce)=100 and theoretical conversion coefficients calculated using the BrIcc program.
[#] From Adopted Gammas.
[@] Absolute intensity per 100 decays.
[&] 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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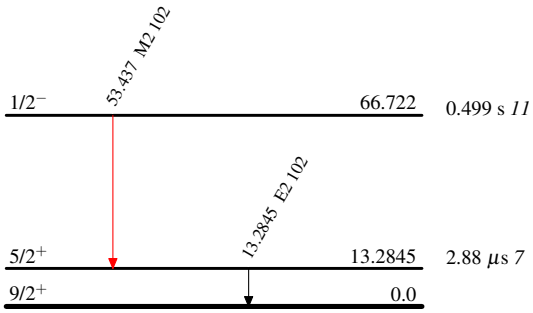
Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
%IT=100.0

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



$^{73}_{32}Ge_{41}$