^{129}In IT decay (110 ms) 2004Ga24,2004Sc42

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Janos Timar and Zoltan Elekes, Balraj Singh	NDS 121, 143 (2014)	31-May-2014

Parent: ^{129}In: E=1911 *56*; J^π=(29/2$^+$); $T_{1/2}$=110 ms *15*; %IT decay=100.0

2004Ga24: the ^{129}In isotope was obtained by thermal-neutron induced fission of a ^{235}U carbide target inside the combined target and ion source ANUBIS. During the measurements of singles data, surface ionization was used to select the element In and thereby suppress the daughter activities. Measured Eβ, Eγ, Iγ, $\gamma\gamma$, $\beta\gamma$(coin), $\gamma\gamma$(t), $T_{1/2}$ (isotope) with 3 Ge detectors of which one was a LEPS. Three Ge detectors were also used for the Q_β measurement, where the LEPS detector was used as a β spectrometer.

Additional information 1.

^{129}In Levels

E(level)	J^π[†]	$T_{1/2}$	Comments
1630 *56*	(23/2$^-$)	0.67 s *10*	%$\beta^-\approx$100 E(level),$T_{1/2}$: from 2004Ga24 by beta decay energy measurement.
1911 *56*	(29/2$^+$)	110 ms *15*	E(level),$T_{1/2}$: from 2004Sc42; half-life also from 1998FoZY. Configuration=$\nu h^{-2}_{11/2}\otimes\pi g^{-1}_{9/2}$.

[†] From Adopted Levels.

$\gamma(^{129}In)$

E_γ	I_γ[†]	E_i(level)	J^π_i	E_f	J^π_f	Mult.	α[‡]	$I_{(\gamma+ce)}$[†]	Comments
281.0 *2*	85.5	1911	(29/2$^+$)	1630	(23/2$^-$)	(E3)	0.1695	100	α(K)=0.1299 *19*; α(L)=0.0320 *5*; α(M)=0.00646 *10* α(N)=0.001123 *17*; α(O)=5.14×10^{-5} *8* Mult.: M2 or E3 from observation of K-x rays (2004Ga24,1998FoZY), with preference for E3 from systematics of neighboring nuclides.

[†] 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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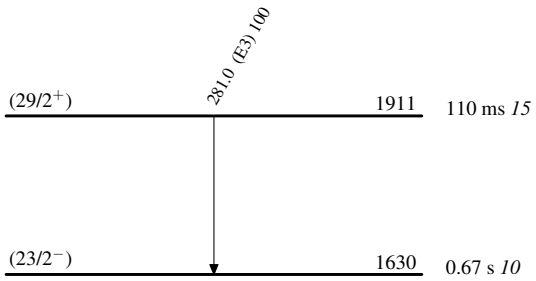
Decay Scheme

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

%IT=100.0



$^{129}_{49}In_{80}$