^{70}Cu IT decay (33 s) 2004Va08,2004Va07

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	G. Gürdal, E. A. Mccutchan	NDS 136, 1 (2016)	1-Jul-2016

Parent: ^{70}Cu: E=101.1 *3*; $J^{\pi}=3^-$; $T_{1/2}$=33 s *2*; %IT decay=48 *9*

2004Va08,2004Va07: ^{70}Cu activity produced through proton-induced fission of a uranium carbide target, E(p)=1 GeV and through low-energy neutron induced fission following a proton-to-neutron converter. Fragments separated using resonant laser-ionization (RILIS) followed by mass separation. In one setup, in-source laser spectroscopy measurements were performed combined with a 4π cylindrical β detector and a Ge(Li) detector. In another setup, measured Eγ, Iγ, $\beta\gamma$, γ(t) using two HPGe detectors and three thin plastic ΔE detectors. 2004Va07 also performed high-resolution mass spectroscopy with the Penning trip mass spectrometer ISOLTRAP.

α: Additional information 1.

^{70}Cu Levels

E(level)	J^{π} †	$T_{1/2}$	Comments
0.0	6^-	44.5 s *2*	%β^-=100 $T_{1/2}$: from β(t); a three component exponential decay was used to account for the 6^- ground state, 1^+ 243-keV isomer and a constant background (2004Va08).
101.1 *3*	3^-	33 s *2*	%β^-=52 *9*; %IT=48 *9* (2004Va08) E(level): high precision mass measurement in 2004Va07 gives 100.7 keV *26*. $T_{1/2}$: from γ(t) of the 209γ, 387γ, 553γ and 708γ from the 3247-keV level in ^{70}Zn (2004Va08).

† From the Adopted Levels.

$\gamma(^{70}Cu)$

E_γ †	I_γ ‡	E_i(level)	J_i^{π}	E_f	J_f^{π}	Mult.	α	$I_{(\gamma+ce)}$ ‡	Comments
101.1 *3*	15.7 *3*	101.1	3^-	0.0	6^-	[M3]	5.35 *11*	100	ce(K)/(γ+ce)=0.720 *8*; ce(L)/(γ+ce)=0.107 *3*; ce(M)/(γ+ce)=0.0153 *4*; ce(N)/(γ+ce)=0.000368 *10* α(K)=4.57 *9*; α(L)=0.682 *14*; α(M)=0.0969 *20*; α(N)=0.00234 *5* I_γ: from I(γ+ce) and α.

† From 2004Va08.

‡ For absolute intensity per 100 decays, multiply by 0.48 *9*.

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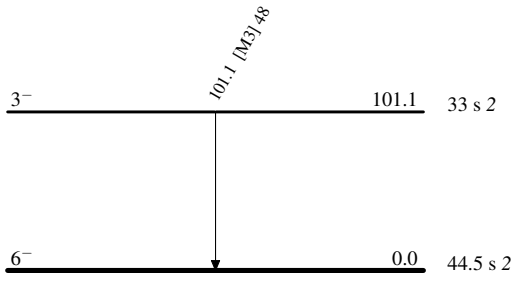
Decay Scheme

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

%IT=48 *9*



$^{70}_{29}Cu_{41}$