^{76}Ni IT decay (0.59 μs)   **2005Ma59**

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	A. R. Farhan, B. Singh, A. K. Jain	ENSDF	30-Nov-2007

Parent: ^{76}Ni: E=2420 *4*; J$^\pi$=(8$^+$); T$_{1/2}$=0.59 μs *+18−11*; %IT decay=100.0

2005Ma59 (also 2005Gr29): ^{76}Ni isomer produced in the fragmentation of ^{86}Kr beam on ^{9}Be target at E=140 MeV/nucleon. Reaction products selected according to their momentum/charge ratio using the A1900 spectrometer of the National Superconducting Cyclotron Laboratory (NSCL). Measured Eγ, Iγ, $\gamma\gamma$, γ(fragment) coin, time-of-flight and ΔE with the NSCL double-sided Si strip detector (DSSD) and the SeGA array of Ge detectors.

2004Sa13: ^{76}Ni isomer produced in the fragmentation of ^{86}Kr beam on Ta target at E=58 MeV/nucleon at GANIL. Measured Eγ, Iγ, (particle)γ coin, deduced half-life of the isomer in ^{76}Ni.

Additional information 1.

^{76}Ni Levels

E(level)	J$^{\pi\dagger}$	T$_{1/2}$	Comments
0‡	0$^+$		
992‡ *2*	(2$^+$)		
1922‡ *3*	(4$^+$)		
2276‡ *4*	(6$^+$)		
2420‡ *4*	(8$^+$)	0.59 μs *+18−11*	Configuration=νg$_{9/2}^2$ (2004Sa13).
			T$_{1/2}$: from time distribution of all the 18 events for 354γ, 930γ and 992γ (2005Ma59).
			Other: 0.24 μs *8* (2004Sa13, some authors are common with those in 2005Ma59).

† Comparisons with shell-model calculations (2005Ma59).

‡ Band(A): Yrast band. No experimental evidence (2005Ma59) for the existence of expected 12$^+$ or 14$^+$ isomers.

γ(^{76}Ni)

| E$_\gamma$	I$_\gamma$†	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	$\alpha^\ddagger$	Comments
144 *2*	92 *38*	2420	(8$^+$)	2276	(6$^+$)	[E2]	0.143 *8*	α(K)=0.127 *8*; α(L)=0.0136 *8*; α(M)=0.00190 *11*; α(N+..)=7.1×10^{-5} *4* α(N)=7.1×10^{-5} *4* B(E2)(W.u.)=0.71 *+15−23*
354 *2*	54 *25*	2276	(6$^+$)	1922	(4$^+$)			
930 *2*	97 *46*	1922	(4$^+$)	992	(2$^+$)			
992 *2*	100 *33*	992	(2$^+$)	0	0$^+$			

† 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

Legend

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

$I_\gamma < \ 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
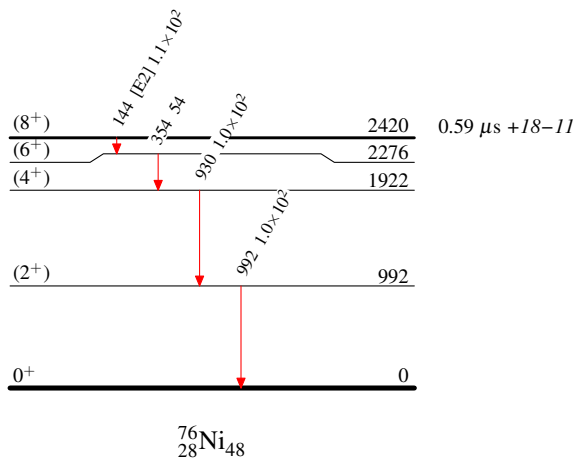
$^{76}_{28}$Ni$_{48}$

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Band(A): Yrast band

(8$^+$)		2420
	144	
(6$^+$)		2276
	354	
(4$^+$)		1922
	930	
(2$^+$)		992
	992	
0$^+$		0

$^{76}_{28}$Ni$_{48}$