Adopted Levels, Gammas

History

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

Q(β^-)=3762.5 *24*; S(n)=7307 *4*; S(p)=1.633×10^4 *19*; Q(α)=−11571 *5* 2012Wa38
S(2n)=11893 *4*; S(2p)=2.997×10^4 *37* (2012Wa38).
α: Additional information 1.

^{70}Ni Levels

Cross Reference (XREF) Flags

A	^{70}Co β^- decay (112 ms)	E	Coulomb excitation
B	^{70}Co β^- decay (0.47 s)	F	Ni(^{86}Kr,Xγ),^{9}Be(^{76}Ge,Xγ)
C	^{71}Co β^-n decay	G	^{9}Be(^{72}Ni,^{70}Niγ),(^{73}Cu,^{70}Niγ)
D	^{72}Co β^-2n decay	H	^{208}Pb(^{70}Zn,Xγ)

E(level)†	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0‡	0$^+$	6.0 s *3*	ABCDEFGH	%β^-=100 T$_{1/2}$: from γ(t) in 2001Fr21,1998Fr15.
1259.55‡ *5*	2$^+$	1.04 ps *17*	ABCDEFGH	B(E2)↑=0.086 *14* J$^\pi$: Coulomb excitation from 0$^+$ ground state. B(E2)↑: from Coulomb excitation; relative to B(E2)=0.268 *8* for the first 2$^+$ state of ^{76}Ge. T$_{1/2}$: deduced by evaluators from B(E2) and adopted γ-ray properties.
1567.1 *8*	(0$^+$)	<70 ns	B	T$_{1/2}$: from $\beta\gamma$(t) in ^{70}Co β^- decay (0.47 s). J$^\pi$: from non-observation in multinucleon transfer reactions and absence of 1567γ in β-delayed, γ-ray spectrum.
1867.44 *14*	(2$^+$)		B G	J$^\pi$: direct β feeding from (3$^+$) parent and 1868γ to 0$^+$.
2229.44‡ *6*	4$^+$		A D FGH	J$^\pi$: E2 970γ to 2$^+$.
2507.4 *10*			G	
2516.36 *21*			G	
2677.82‡ *7*	6$^+$	1.049 ns *26*	A FGH	XREF: G(?). T$_{1/2}$: from $\gamma\gamma$(t) in Ni(^{86}Kr,Xγ),^{9}Be(^{76}Ge,Xγ). J$^\pi$: E2 449γ to 4$^+$.
2860.93‡ *7*	8$^+$	0.232 μs *1*	F H	%IT=100 T$_{1/2}$: from γ(t) in Ni(^{86}Kr,Xγ),^{9}Be(^{76}Ge,Xγ). J$^\pi$: E2 183γ to 6$^+$. configuration=(νg$_{9/2}$)$^{+2}$ (1998Gr14).
2912.05 *11*	(5,6$^+$)		A H	J$^\pi$: β-feeding from (6$^-$,7$^-$) parent, 683γ to 4$^+$.
3209.6 *20*			G	
3510.9 *8*			B	
3592.2 *3*			A H	
3758.1 *3*			H	
4871.5 *4*			H	
5354.4 *4*			H	

† From a least-squares fit to Eγ, by evaluators.
‡ Band(A): ΔJ=2 Cascade.

Adopted Levels, Gammas (continued)

$\gamma(^{70}Ni)$

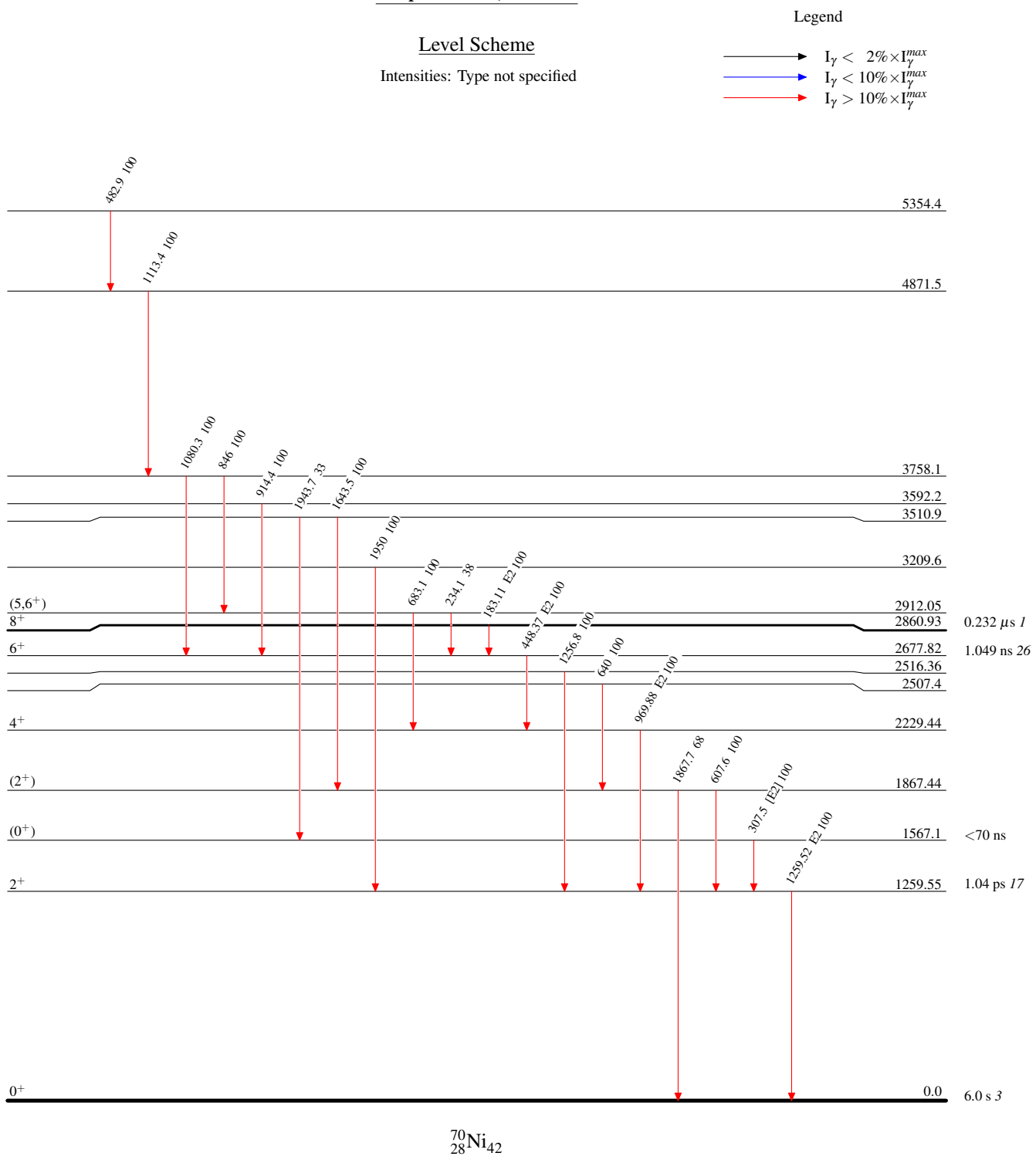
E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[#]	α	Comments
1259.55	2^+	1259.52 *5*	100	0.0	0^+	E2	1.62×10^{-4}	α(K)=0.0001283 *18*; α(L)=1.252×10^{-5} *18*; α(M)=1.763×10^{-6} *25*; α(N)=7.60×10^{-8} *11* B(E2)(W.u.)=10.0 *17* Mult.: from Coulomb Excitation from ground state.
1567.1	(0^+)	307.5[‡]	100	1259.55	2^+	[E2]	0.00853	α(K)=0.00764 *11*; α(L)=0.000774 *11*; α(M)=0.0001085 *16*; α(N)=4.41×10^{-6} *7* B(E2)(W.u.)>0.17
1867.44	(2^+)	607.6[‡] *2*	100[‡] *7*	1259.55	2^+			
		1867.7[‡] *2*	68[‡] *6*	0.0	0^+			
2229.44	4^+	969.88 *4*	100	1259.55	2^+	E2	2.60×10^{-4}	α(K)=0.000234 *4*; α(L)=2.29×10^{-5} *4*; α(M)=3.23×10^{-6} *5*; α(N)=1.383×10^{-7} *20*
2507.4		640[@] *1*	100	1867.44	(2^+)			
2516.36		1256.8[‡] *2*	100	1259.55	2^+			E_γ: unplaced transition in ^{70}Co β^- decay, placement from ^{9}Be(^{72}Ni,^{70}Niγ),(^{73}Cu,^{70}Niγ).
2677.82	6^+	448.37 *3*	100	2229.44	4^+	E2	0.00235	α(K)=0.00211 *3*; α(L)=0.000210 *3*; α(M)=2.96×10^{-5} *5*; α(N)=1.232×10^{-6} *18* B(E2)(W.u.)=1.73 *5*
2860.93	8^+	183.11 *2*	100	2677.82	6^+	E2	0.0573	α(K)=0.0512 *8*; α(L)=0.00536 *8*; α(M)=0.000749 *11*; α(N)=2.89×10^{-5} *4* B(E2)(W.u.)=0.656 *19*
2912.05	$(5,6^+)$	234.1 *1*	38 *4*	2677.82	6^+			
		683.1 *2*	100 *9*	2229.44	4^+			
3209.6		1950[@] *2*	100	1259.55	2^+			
3510.9		1643.5[‡]	100[‡] *30*	1867.44	(2^+)			
		1943.7[‡]	33[‡] *10*	1567.1	(0^+)			
3592.2		914.4 *3*	100	2677.82	6^+			
3758.1		846 *1*	100 *50*	2912.05	$(5,6^+)$			
		1080.3 *3*	100 *13*	2677.82	6^+			
4871.5		1113.4 *2*	100	3758.1				
5354.4		482.9 *2*	100	4871.5				

[†] From ^{208}Pb(^{70}Zn,Xγ), except where noted.
[‡] From ^{70}Co β^- decay (0.47 s).
[#] From $\gamma\gamma(\theta)$ in ^{208}Pb(^{70}Zn,Xγ), except where noted. Q transitions are assumed to be E2 in character.
[@] From ^{9}Be(^{72}Ni,^{70}Niγ),(^{73}Cu,^{70}Niγ).

Adopted Levels, Gammas

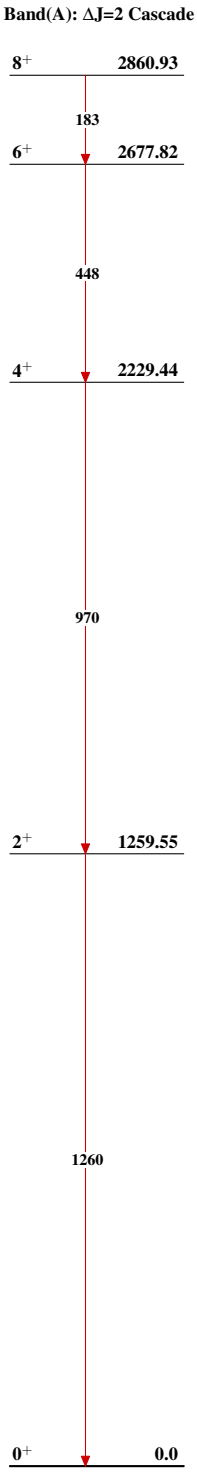
Level Scheme

Intensities: Type not specified



$^{70}_{28}Ni_{42}$

Adopted Levels, Gammas



$^{70}_{28}Ni_{42}$