Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Lalkovski, F. G. Kondev	NDS 124, 157 (2015)	1-Aug-2014

Q(β^-)=−13739 *87*; S(n)=13705 *87*; S(p)=2362 *10*; Q(α)=3330 *6* 2012Wa38

^{112}Xe Levels

Cross Reference (XREF) Flags

A ^{58}Ni(^{58}Ni,2p2nγ)
B ^{113}Cs p decay (18.3 μs)

E(level)†	J$^\pi$‡	$T_{1/2}$	XREF	Comments
0.0#	0^+	2.7 s *8*	AB	%ε+%β^+=98.8 *8*; %α=1.2 *8* %α: symmetrized from %α=0.8 +1.1-0.5 (1994Pa12) using the procedure adopted in 2012Wa38. Other: ≈0.84 in 1978Ro19, but this value is tentative. $T_{1/2}$: from 3185α(t) in 1979Sc22. Other: 2.8 s *2* from (ε+β^+)-delayed α(t) in 1978Ro19, but this value is more uncertain given the complexity of the spectra, as discussed in 1979Sc22.
466.00# *20*	2^+		A	J$^\pi$: first-excited member of the g.s. band of an even-even nuclide.
1122.1# *3*	4^+		A	J$^\pi$: 656.1γ E2 to 2^+; band member.
1649.5?@ *5*	(3^-)		A	J$^\pi$: 1183.0γ to 2^+; band member; systematics in neighbouring nuclei.
1906.9# *4*	6^+		A	J$^\pi$: 784.8γ E2 to 4^+; band member.
2021.9@ *4*	(5^-)		A	J$^\pi$: 900.0γ D to 4^+, 372.0γ to (3^-); band member.
2594.1@ *4*	(7^-)		A	J$^\pi$: 572.2γ E2 to (5^-), 687.1γ to 6^+; band member.
2777.5# *4*	8^+		A	J$^\pi$: 870.6γ E2 to 6^+; band member.
3189.1@ *7*	(9^-)		A	J$^\pi$: 595.0γ to (7^-); band member.
3549.6# *5*	10^+		A	J$^\pi$: 772.1γ to 8^+; band member.
3852.3@ *8*	(11^-)		A	J$^\pi$: 663.2γ to (9^-); band member.
4447.3?@ *10*	(13^-)		A	J$^\pi$: 595γ to (11^-); band member.
4469.1# *5*	12^+		A	J$^\pi$: 919.5γ to 10^+; band member.

† From a least-squares fit to Eγ.
‡ From the deduced γ-ray multipolarities, the observed apparent band structures and systematics in neighbouring nuclei in ^{58}Ni(^{58}Ni,2p2nγ) (2001Sm13).
# Band(A): K$^\pi$=0^+, ground-state band.
@ Band(B): ΔJ=2 negative-parity band.

γ(^{112}Xe)

E_i(level)	J_i^π	E_γ†	I_γ	E_f	J_f^π	Mult.‡	Comments
466.00	2^+	466.0 *2*	100	0.0	0^+		
1122.1	4^+	656.1 *2*	100	466.00	2^+	E2	Mult.: R_{DCO}=1.33 *15* (2001Sm13).
1649.5?	(3^-)	1183.0 *6*	100	466.00	2^+		
1906.9	6^+	784.8 *2*	100	1122.1	4^+	E2	Mult.: R_{DCO}=1.3 *2* (2001Sm13).
2021.9	(5^-)	372.0 *6*		1649.5?	(3^-)		
		900.0 *2*		1122.1	4^+	D	Mult.: R_{DCO}=0.88 *13* (2001Sm13).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{112}Xe)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	Comments
2594.1	(7^-)	572.2 *2*		2021.9	(5^-)	E2	Mult.: R_{DCO}=1.3 *2* (2001Sm13).
		687.1 *2*		1906.9	6^+		
2777.5	8^+	870.6 *2*	100	1906.9	6^+	E2	Mult.: R_{DCO}=1.24 *15* (2001Sm13).
3189.1	(9^-)	595.0 *6*	100	2594.1	(7^-)		
3549.6	10^+	772.1 *2*	100	2777.5	8^+		
3852.3	(11^-)	663.2 *2*	100	3189.1	(9^-)		
4447.3?	(13^-)	595[#] *1*	100	3852.3	(11^-)		
4469.1	12^+	919.5 *2*	100	3549.6	10^+		

[†] From ^{58}Ni(^{58}Ni,2p2nγ) (2001Sm13).

[‡] From the measured asymmetry ratio R_{DCO}=Iγ(30°or150°)/Iγ(90°) in ^{58}Ni(^{58}Ni,2p2nγ) (2001Sm13). A value of $R_{DCO}\approx$1.0 would be expected for a stretched-dipole transition and ≈1.4 for a stretched-quadruple transition. Those were confirmed for known ΔJ=1 333γ (R_{DCO}=0.97 *7*) and ΔJ=2 642γ (R_{DCO}=1.33 *10*) in ^{112}I, observed in ^{58}Ni(^{58}Ni,2p2nγ) (2001Sm13).

[#] Placement of transition in the level scheme is uncertain.

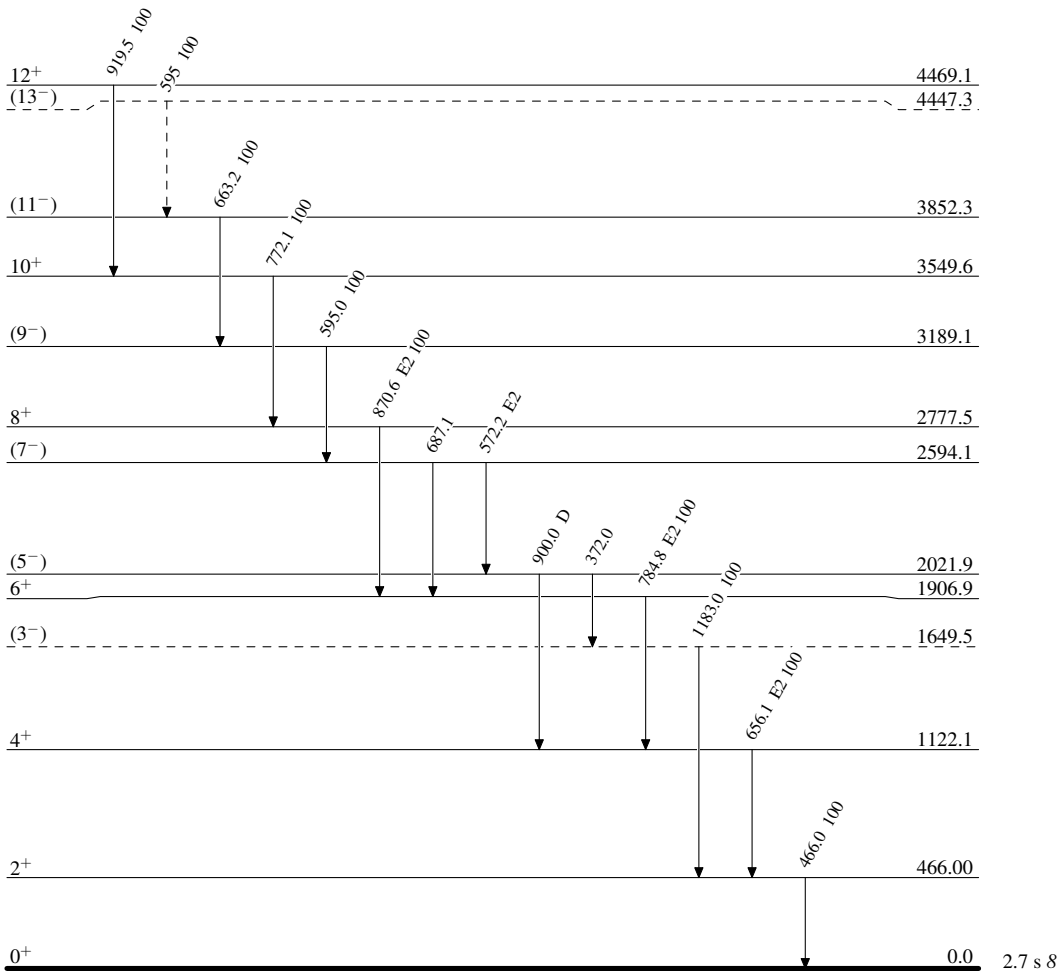
Adopted Levels, Gammas

Legend

Level Scheme

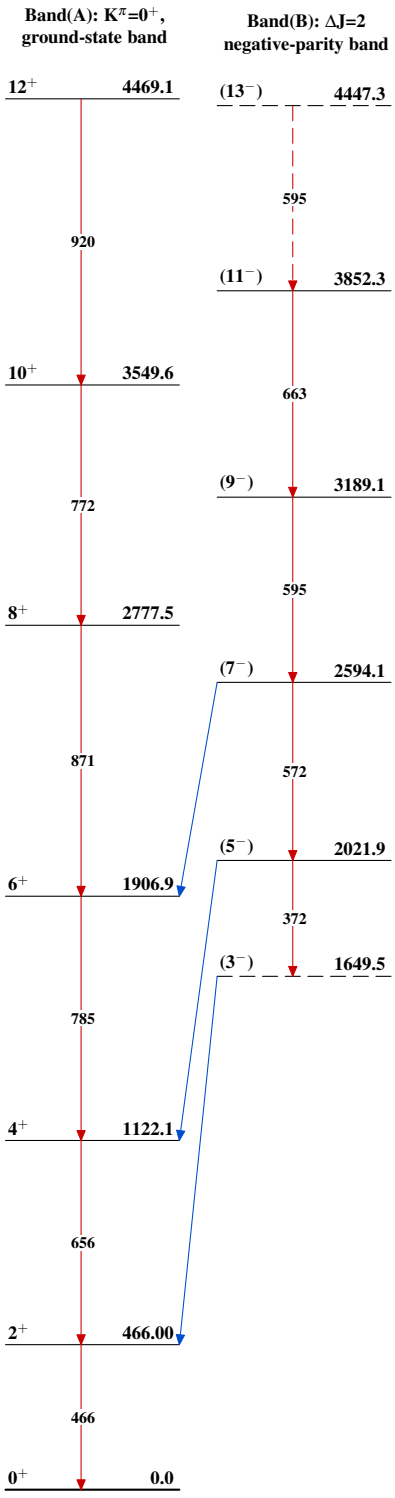
Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{112}_{54}Xe_{58}$

Adopted Levels, Gammas



$^{112}_{54}Xe_{58}$