^{112}Sn(^{60}Ni,2pnγ) 2002Jo20

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109, 2033 (2008)	15-Jun-2008

E(^{60}Ni)=265 MeV; RITU gas-filled recoil separator with Si strip detector In focal plane, JUROSPHERE detector array (13 EUROGAM and 12 TESSA-type Compton-suppressed Ge detectors); recoil α decay tagging technique; measured 5576α-γ correlations, Eγ, Iγ, recoil-$\gamma\gamma$ coin, Eα.

^{169}Os Levels

Notation used for orbitals:
A, B: (ν $i_{13/2}$) orbital.
E, F: $f_{7/2}$ or $h_{9/2}$ orbital.

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
0.0+x#	(13/2$^+$)	1370+x# *1*	(25/2$^+$)	2073+x# *1*	(29/2$^+$)	2976+x@ *1*	(35/2$^-$)
280+x# *1*	(17/2$^+$)	1620+x& *1*	(23/2$^+$)	2183+x@ *1*	(27/2$^-$)	3556+x@ *1*	(39/2$^-$)
759+x# *1*	(21/2$^+$)	1833+x@ *1*	(23/2$^-$)	2530+x@ *1*	(31/2$^-$)	3625+x# *1*	(37/2$^+$)
1024+x& *1*	(19/2$^+$)	1978+x *1*	(25/2$^-$)[a]	2842+x# *1*	(33/2$^+$)		

† From fig. 2 (^{169}Os level scheme) of 2002Jo20, assuming the 13/2$^+$ state is not the g.s.; the first 13/2$^+$ state lies At E=186 In ^{171}Os and At E=146 to≈200 In ^{173}Os.
‡ Authors′ values based on likely quasiparticle configurations and comparison with similar structures In neighboring odd-A nuclei.
# Band(A): (ν $i_{13/2}$), α=+1/2 A band.
@ Band(B): π=−, α=−1/2 band. Large alignment (14.4 $\hbar$ At $\hbar\omega$=0.25 MeV) suggests three-quasiparticle structure, possibly EAB or FAB, analogous to ^{171}Os band; drop In alignment At $\hbar\omega$≈0.17 MeV May indicate presence of mixing with octupole vibrational bands. The E and F orbitals are expected to originate from the $f_{7/2}$ or $h_{9/2}$ subshell, A and B orbitals from ν $i_{13/2}$.
& Band(C): π=+, α=−1/2 band. Possibly the (ν $i_{13/2}$), α=−1/2 B band or the A band coupled to a collective phonon excitation.
[a] Possible EAB configuration state.

γ(^{169}Os)

Eγ†	Ei(level)	Jiπ	Ef	Jfπ	Comments
280 *1*	280+x	(17/2$^+$)	0.0+x	(13/2$^+$)	
348 *1*	2530+x	(31/2$^-$)	2183+x	(27/2$^-$)	
349 *1*	2183+x	(27/2$^-$)	1833+x	(23/2$^-$)	Iγ: see comment on 813γ.
446 *1*	2976+x	(35/2$^-$)	2530+x	(31/2$^-$)	
478 *1*	759+x	(21/2$^+$)	280+x	(17/2$^+$)	
580 *1*	3556+x	(39/2$^-$)	2976+x	(35/2$^-$)	
597 *1*	1620+x	(23/2$^+$)	1024+x	(19/2$^+$)	Iγ: see comment on 861γ.
608 *1*	1978+x	(25/2$^-$)	1370+x	(25/2$^+$)	
611 *1*	1370+x	(25/2$^+$)	759+x	(21/2$^+$)	
704 *1*	2073+x	(29/2$^+$)	1370+x	(25/2$^+$)	
744 *1*	1024+x	(19/2$^+$)	280+x	(17/2$^+$)	
768 *1*	2842+x	(33/2$^+$)	2073+x	(29/2$^+$)	
783 *1*	3625+x	(37/2$^+$)	2842+x	(33/2$^+$)	
813 *1*	2183+x	(27/2$^-$)	1370+x	(25/2$^+$)	Iγ: based on fig. 2 (^{169}Os level scheme) of 2002Jo20, I(813γ) and I(349γ) are comparable.
861 *1*	1620+x	(23/2$^+$)	759+x	(21/2$^+$)	Iγ: based on fig. 2 (^{169}Os level scheme) of 2002Jo20, I(861γ)>I(597γ).
1075 *1*	1833+x	(23/2$^-$)	759+x	(21/2$^+$)	

† From 2002Jo20.

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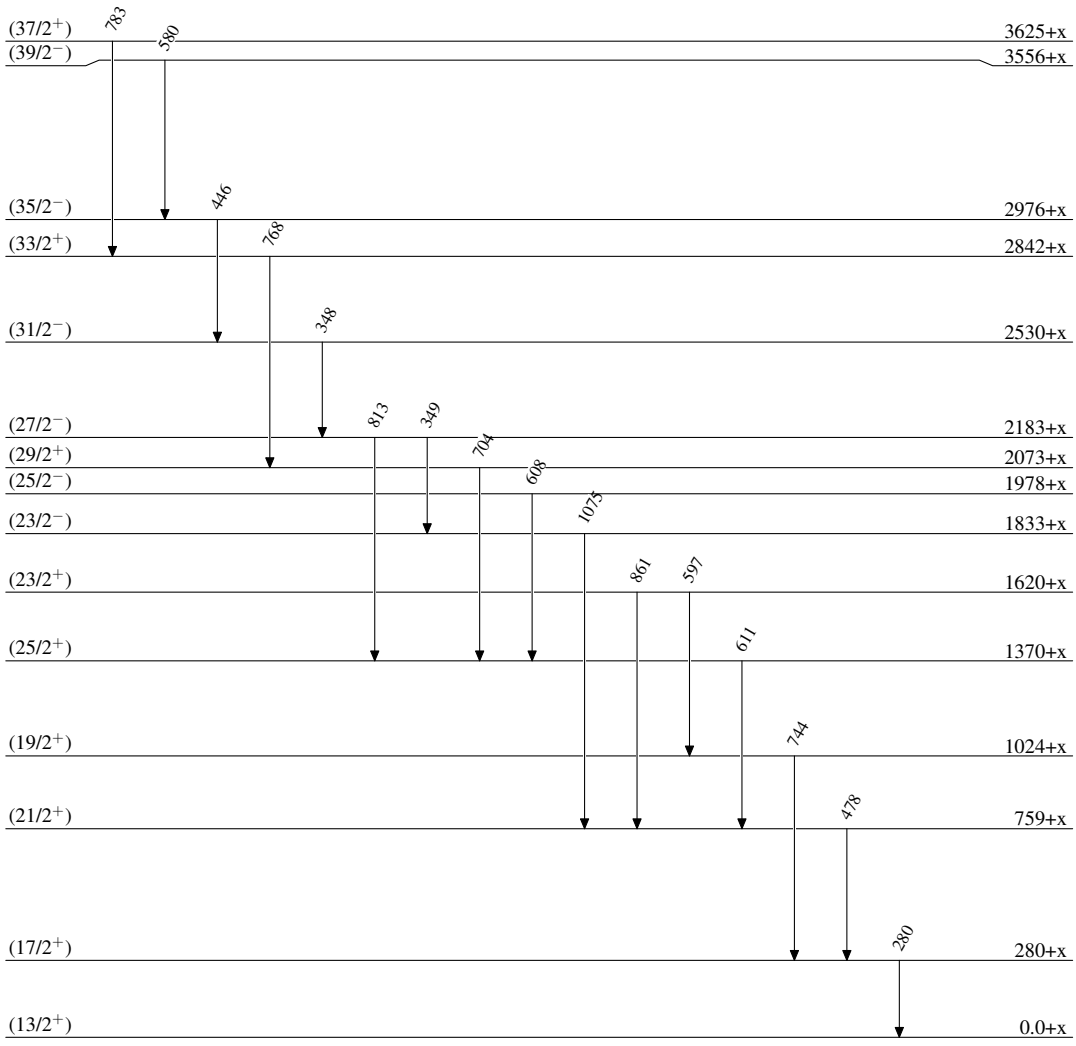
Level Scheme



$^{169}_{76}Os_{93}$

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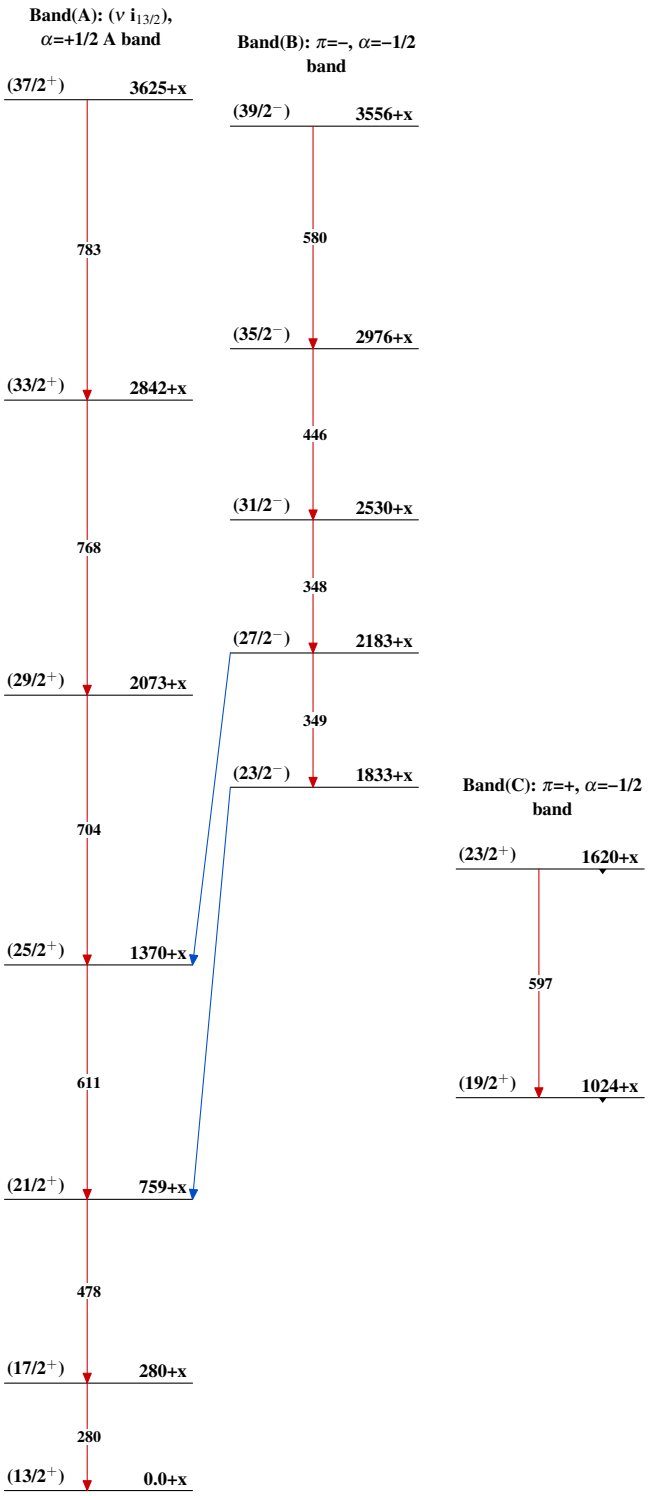

$^{169}_{76}Os_{93}$