^{58}Ni(^{40}Ca,2α2pγ):SD 2004La21,2003La24,1999Bb13

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan and A. A. Sonzogni	NDS 115, 135 (2014)	1-Nov-2013

2004La21, 2003La24: E=185 MeV. Measured Eγ, Iγ, $\gamma\gamma$, particle-γ coin, lifetimes using Gammasphere array with 102 Compton-suppressed Ge detectors and Microball charged-particle array of 95 CsI(Tl) detectors. See also discussion by 2004La18.
1999Bb13: E=185 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$(DCO), particle-γ coin, lifetimes for SD bands using GAMMASPHERE array with 94 Compton-suppressed Ge detectors and Microball charged-particle array of 95 CsI(Tl) detectors.
Additional information 1.

^{88}Mo Levels

E(level)	J$^\pi$	E(level)	J$^\pi$	E(level)	J$^\pi$	E(level)	J$^\pi$
x[†]	J1	13893.6+x[†] *14*	J1+16	z[#]	J3	14059+z[#] *5*	J3+16
1238.6+x[†] *4*	J1+2	y[‡]	J2	1260.1+z[#] *12*	J3+2	u[@]	J4
2580.7+x[†] *5*	J1+4	1459.6+y[‡] *8*	J2+2	2642.7+z[#] *18*	J3+4	1418.6+u[@] *9*	J4+2
4061.4+x[†] *6*	J1+6	3055.2+y[‡] *11*	J2+4	4165.7+z[#] *25*	J3+6	2979.4+u[@] *14*	J4+4
5694.9+x[†] *6*	J1+8	4798.3+y[‡] *12*	J2+6	5835+z[#] *3*	J3+8	4685.7+u[@] *17*	J4+6
7490.4+x[†] *7*	J1+10	6693.2+y[‡] *13*	J2+8	7652+z[#] *4*	J3+10	6544.5+u[@] *19*	J4+8
9452.6+x[†] *7*	J1+12	8747.4+y[‡] *16*	J2+10	9628+z[#] *4*	J3+12	8540.1+u[@] *24*	J4+10
11587.0+x[†] *9*	J1+14	10971.7+y[‡] *23*	J2+12	11762+z[#] *4*	J3+14	10629+u?[@] *3*	J4+12

[†] Band(A): SD-1 band (1999Bb13,2003La24,2004La21). Q(intrinsic)=5.2 *3* (2003La24), 6.0 *+20−14* (1999Bb13). Configuration=$\pi 1/2[431]^{-1}5^1$; π=−, α=1 (1999Bb13); $\nu 5^2\pi 5^1$ or $\nu 5^2\pi 5^0$ (2003La24). Percent population ≈1% of the reaction channel.
[‡] Band(B): SD-2 band (1999Bb13,2003La24,2004La21). Q(intrinsic)=7.6 *+53−17* (2003La24). Configuration=$\pi 5/2[422]^{-1}5^1$; π=− (1999Bb13,2004La21) Percent population ≈0.3% of the reaction channel.
[#] Band(C): SD-3 band (1999Bb13,2004La21). Configuration=$\pi 5/2[422]^{-1}5^1$; π=−. SD-2 and SD-3 bands are interpreted as signature partners. This band is isospectral with SD band in ^{89}Tc (2004La21). Percent population ≈0.3% of the reaction channel.
[@] Band(D): SD-4 band (2004La21). This band is assigned as SD "vacuum" configuration (2004La21) Percent population ≈0.3% of the reaction channel.

γ(^{88}Mo)

E$_\gamma$[†]	I$_\gamma$[‡]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[#]	Comments
1238.6 *4*	0.50 *7*	1238.6+x	J1+2	x	J1	Q	R(DCO)=1.1 *3*.
1260.1 *12*	0.15 *15*	1260.1+z	J3+2	z	J3		
1342.07 *23*	0.90 *7*	2580.7+x	J1+4	1238.6+x	J1+2	Q	R(DCO)=1.6 *+4−3*.
1382.6 *13*	0.95 *20*	2642.7+z	J3+4	1260.1+z	J3+2		
1418.6 *9*	0.90 *15*	1418.6+u	J4+2	u	J4		
1459.6 *8*	0.85 *15*	1459.6+y	J2+2	y	J2		
1480.70 *23*	1.00 *7*	4061.4+x	J1+6	2580.7+x	J1+4	Q	R(DCO)=1.9 *+4−3*.
1522.9 *17*	0.85 *20*	4165.7+z	J3+6	2642.7+z	J3+4		
1560.8 *10*	0.95 *15*	2979.4+u	J4+4	1418.6+u	J4+2		
1595.6 *7*	0.90 *15*	3055.2+y	J2+4	1459.6+y	J2+2		
1633.45 *22*	1.00 *7*	5694.9+x	J1+8	4061.4+x	J1+6	Q	R(DCO)=2.1 *+5−4*.
1668.9 *16*	0.95 *40*	5835+z	J3+8	4165.7+z	J3+6		
1706.2 *9*	1.00 *15*	4685.7+u	J4+6	2979.4+u	J4+4		
1743.1 *5*	1.00 *20*	4798.3+y	J2+6	3055.2+y	J2+4		
1795.50 *25*	1.00 *7*	7490.4+x	J1+10	5694.9+x	J1+8	Q	R(DCO)=1.6 *+4−3*.
1817.8 *15*	1.15 *30*	7652+z	J3+10	5835+z	J3+8		
1858.8 *9*	1.00 *15*	6544.5+u	J4+8	4685.7+u	J4+6		

Continued on next page (footnotes at end of table)

^{58}Ni(^{40}Ca,2α2pγ):SD 2004La21,2003La24,1999Bb13 (continued)

γ(^{88}Mo) (continued)

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	Comments
1894.8 *5*	1.05 *20*	6693.2+y	J2+8	4798.3+y	J2+6		
1962.2 *3*	0.65 *7*	9452.6+x	J1+12	7490.4+x	J1+10	Q	R(DCO)=1.9 *+6−4*.
1975.3 *14*	1.10 *20*	9628+z	J3+12	7652+z	J3+10		
1995.6 *14*	0.30 *10*	8540.1+u	J4+10	6544.5+u	J4+8		
2054.2 *9*	0.45 *15*	8747.4+y	J2+10	6693.2+y	J2+8		
2088.5[@] *20*	0.40 *10*	10629+u?	J4+12	8540.1+u	J4+10		
2133.4 *5*	0.30 *5*	11587.0+x	J1+14	9452.6+x	J1+12	(Q)	R(DCO)=1.0 *+8−6*.
2134.7 *14*	1.05 *20*	11762+z	J3+14	9628+z	J3+12		
2224.3 *16*	0.15 *10*	10971.7+y	J2+12	8747.4+y	J2+10		
2297 *3*	0.35 *15*	14059+z	J3+16	11762+z	J3+14		
2306.5 *11*	0.15 *5*	13893.6+x	J1+16	11587.0+x	J1+14		

[†] From 2004La21. For SD-1 and SD-2 same values are given in 2003La24. For SD-1, SD-2 and SD-3 the values given by 1999Bb13 are in general agreement, but in some cases differ by as much as 4 keV.

[‡] Values are relative intensities within each band, normalized to ≈1 for the strongest transition in the band. These values were read from the intensity plot given in figure 2 of 2004La21.

[#] Stretched quadrupole from R(DCO) in 1999Bb13.

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

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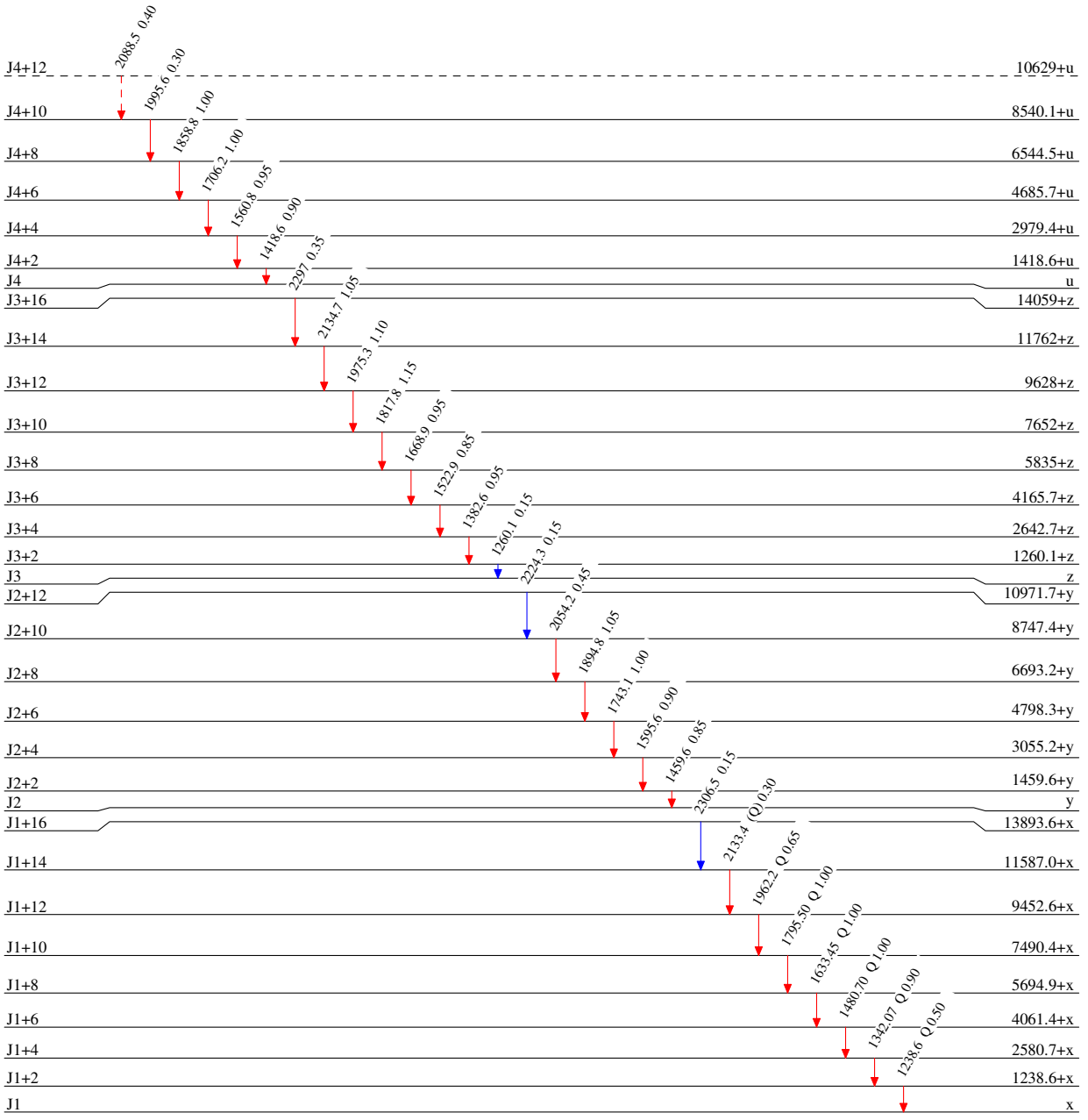
Level Scheme

Intensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



$^{88}_{42}Mo_{46}$

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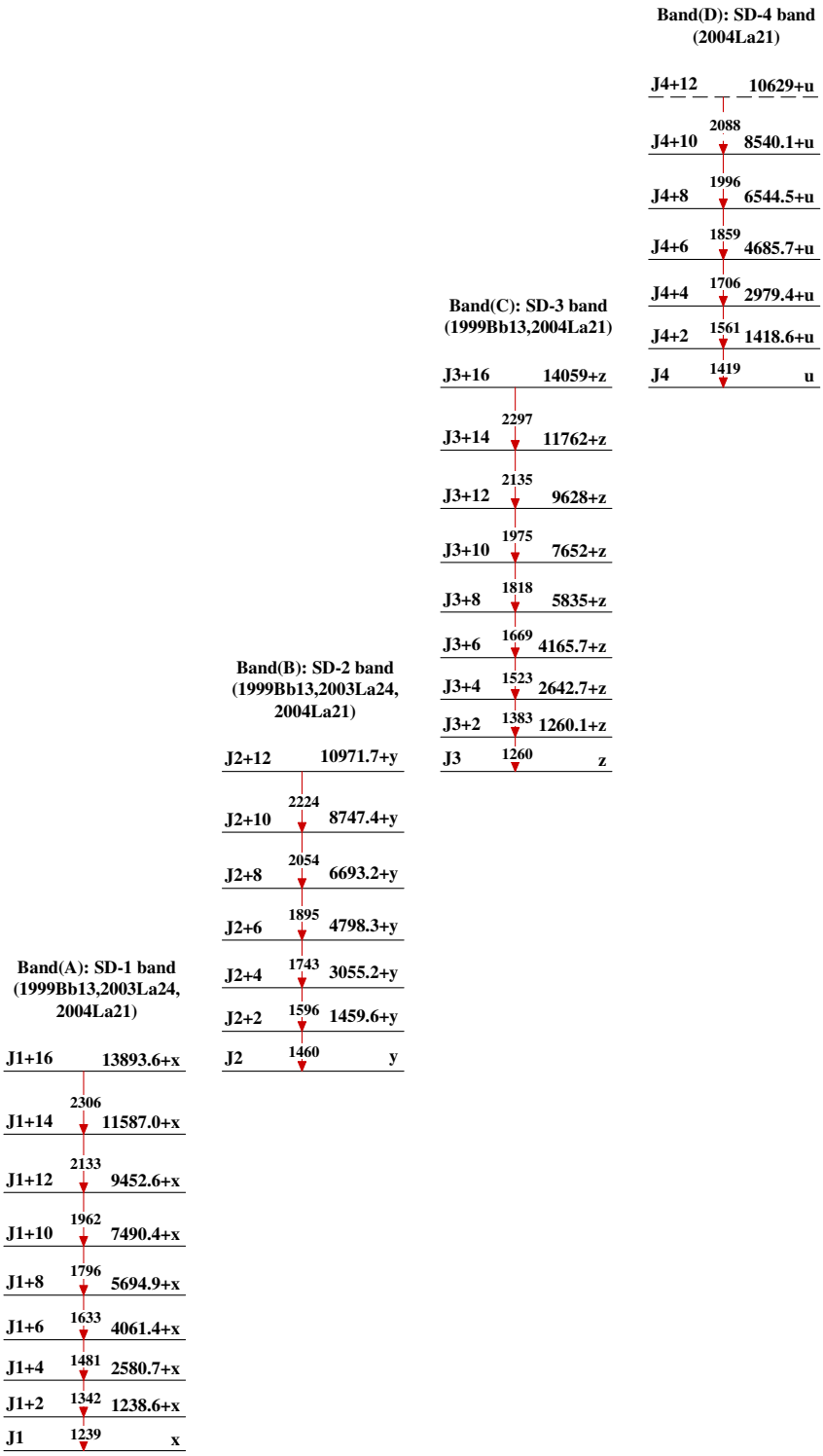

$^{88}_{42}Mo_{46}$