^{82}Se(^{18}O,3nγ) 2004Ch18

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 111, 525 (2010)	19-Nov-2009

2004Ch18,2001Ch90: E=60 MeV, 86% enriched target. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$(DCO) using an array of 10 Compton-suppressed HPGe γ-X detectors (25% efficiency) placed at 51°, 98°, and 144° along with 14 element BGO multiplicity filter.

The population of 3n evaporation channel estimated to Be 9% of the total fusion cross section.

^{97}Mo Levels

E(level)†	J$^\pi$‡	E(level)†	J$^\pi$‡	E(level)†	J$^\pi$‡
0.0@	5/2$^+$	2434.51& *17*	15/2$^+$	4519.7[a] *5*	27/2$^-$
658.10& *10*	7/2$^+$	2712.81& *20*	17/2$^+$	5214.8[a] *5*	(29/2$^-$,31/2$^-$)#
1116.61@ *13*	9/2$^+$	2725.5[a] *3*	19/2$^-$	6198.5[a] *6*	(33/2$^-$,35/2$^-$)#
1409.51& *14*	11/2$^+$	2829.41& *22*	19/2$^+$	7361.6?[a] *6*	
1437.01[a] *12*	11/2$^-$	3572.1[a] *4*	23/2$^-$	8572.9?[a] *10*	
1920.31 *24*	13/2$^+$	3748.3& *3*	21/2$^+$		
2002.61[a] *16*	15/2$^-$	4473.4& *4*	25/2$^+$		

† From least-squares fit to Eγ's.
‡ ADOPTED by 2004Ch18 from 2001Bu01 (^{82}Se(^{19}F,p3nγ) dataset) except where noted otherwise.
# ADOPTED by 2004Ch18 based on particularities of level scheme and γ-ray multiplicities (for the 695γ mult is inconclusive).
@ Band(A): $\nu d_{5/2}$ band.
& Band(B): $\nu g_{7/2}$ band.
a Band(C): $\nu h_{11/2}$ band.

γ(^{97}Mo)

DCO ratios are for 144° and 98°; gates are set on ΔJ=2, Q transitions.

E$_\gamma$	I$_\gamma$†	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.‡	δ#	Comments
116.6 *1*	17.2 *20*	2829.41	19/2$^+$	2712.81	17/2$^+$	D		DCO=0.53 *5* Mult.: M1 adopted by 2004Ch18 but ΔJ=1, D based on their DCO.
278.3 *1*	25@ *3*	2712.81	17/2$^+$	2434.51	15/2$^+$	(M1+E2)		DCO=0.21 *1* Mult.: M1 adopted by 2004Ch18 but ΔJ=1, D+Q based on their DCO.
320.4 *1*	74 *3*	1437.01	11/2$^-$	1116.61	9/2$^+$			DCO=0.37 *7*. Mult.: E1 adopted by 2004Ch18 but ΔJ=1, D+Q based on their DCO; No mult is ADOPTED.
565.6 *1*	79.6 *3*	2002.61	15/2$^-$	1437.01	11/2$^-$			DCO=0.43 *2*. Mult.: M1+E2 with δ=−0.16 *3* adopted by 2004Ch18 based on their DCO, which contradicts their adopted J$^\pi$ for the parent level; No mult is ADOPTED.
658.1 *1*	173.9 *23*	658.10	7/2$^+$	0.0	5/2$^+$	(M1+E2)	−0.27 *1*	DCO=0.35 *4*
695.1 *2*	19.7@ *24*	5214.8	(29/2$^-$,31/2$^-$)	4519.7	27/2$^-$			Mult.: E2 In table 2 of 2004Ch18 with No DCO value.

Continued on next page (footnotes at end of table)

^{82}Se(^{18}O,3nγ) 2004Ch18 (continued)

γ(^{97}Mo) (continued)

E_γ	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	Comments
722.9 *2*	63 *8*	2725.5	19/2$^-$	2002.61	15/2$^-$		DCO=0.85 *4*. Mult.: E2 adopted by 2004Ch18 but ΔJ=1, D+Q based on their DCO; No mult is ADOPTED.
725.1 *1*	11 *3*	4473.4	25/2$^+$	3748.3	21/2$^+$		
751.4 *1*	29[@] *5*	1409.51	11/2$^+$	658.10	7/2$^+$		Mult.: E2 In table 2 of 2004Ch18 with No DCO value.
778.9 *1*	29 *5*	1437.01	11/2$^-$	658.10	7/2$^+$		DCO=0.73 *6*. Mult.: M2 adopted by 2004Ch18 but based on their DCO ΔJ=1, D+Q can not Be excluded; No mult is ADOPTED.
803.7 *2*	12.4[@] *24*	1920.31	13/2$^+$	1116.61	9/2$^+$		
846.6 *2*	47[@] *5*	3572.1	23/2$^-$	2725.5	19/2$^-$		DCO=0.85 *4*. Mult.: E2 adopted by 2004Ch18 but ΔJ=1, D+Q based on their DCO; No mult is ADOPTED.
918.9 *2*	18 *5*	3748.3	21/2$^+$	2829.41	19/2$^+$		
947.6 *3*	35[@] *6*	4519.7	27/2$^-$	3572.1	23/2$^-$		DCO=1.45 *7*. Mult.: M1+E2 with δ=+0.90 *8* adopted by 2004Ch18 based on their DCO, which contradicts their adopted J^π for the parent level; No mult is ADOPTED.
983.7 *2*	9.4[@] *12*	6198.5	(33/2$^-$,35/2$^-$)	5214.8	(29/2$^-$,31/2$^-$)		DCO=0.85 *4*. Mult.: E2 adopted by 2004Ch18 but ΔJ=1, D+Q based on their DCO; No mult is ADOPTED.
1025.0 *1*	28.2 *22*	2434.51	15/2$^+$	1409.51	11/2$^+$	(E2)	DCO=0.92 *4*
1116.6 *2*	100	1116.61	9/2$^+$	0.0	5/2$^+$	(E2)	DCO=1.15 *4*
1163.1 *3*	7.3 *14*	7361.6?		6198.5	(33/2$^-$,35/2$^-$)		
1211.3 *8*	4.3[@] *13*	8572.9?		7361.6?			

[†] From single data with detectors At 51° unless noted otherwise.
[‡] ADOPTED by evaluator based on DCO ratios measured by 2004Ch18, considering Q As (E2) and D+Q As (M1+E2). Some assignments of 2004Ch18 were not adopted by evaluator (see comments).
[#] Sign convention for mixing ratio unspecified by 2004Ch18.
[@] Estimated from $\gamma\gamma$ coin spectra.

^{82}Se(^{18}O,3nγ) 2004Ch18

Level Scheme

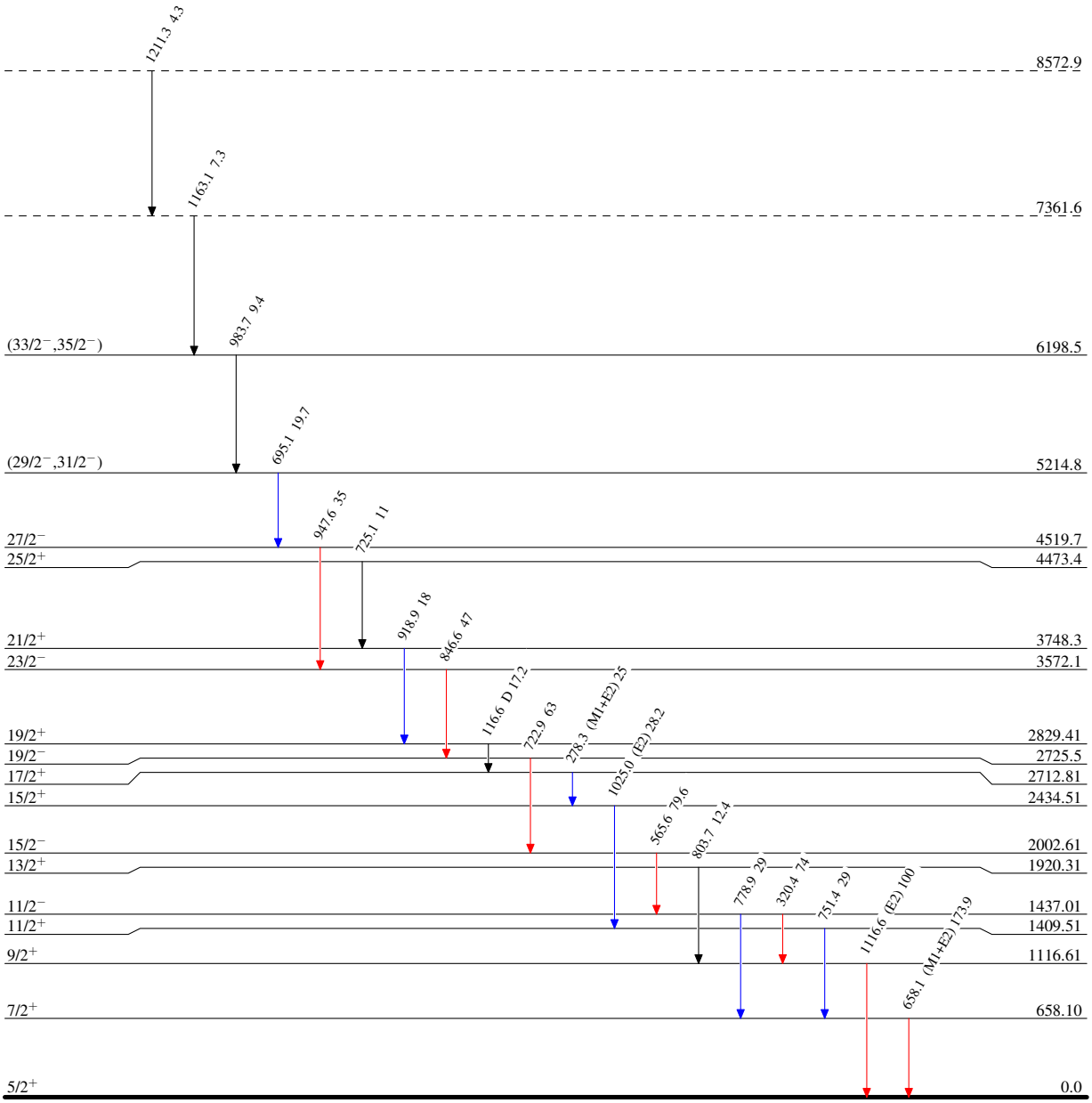
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

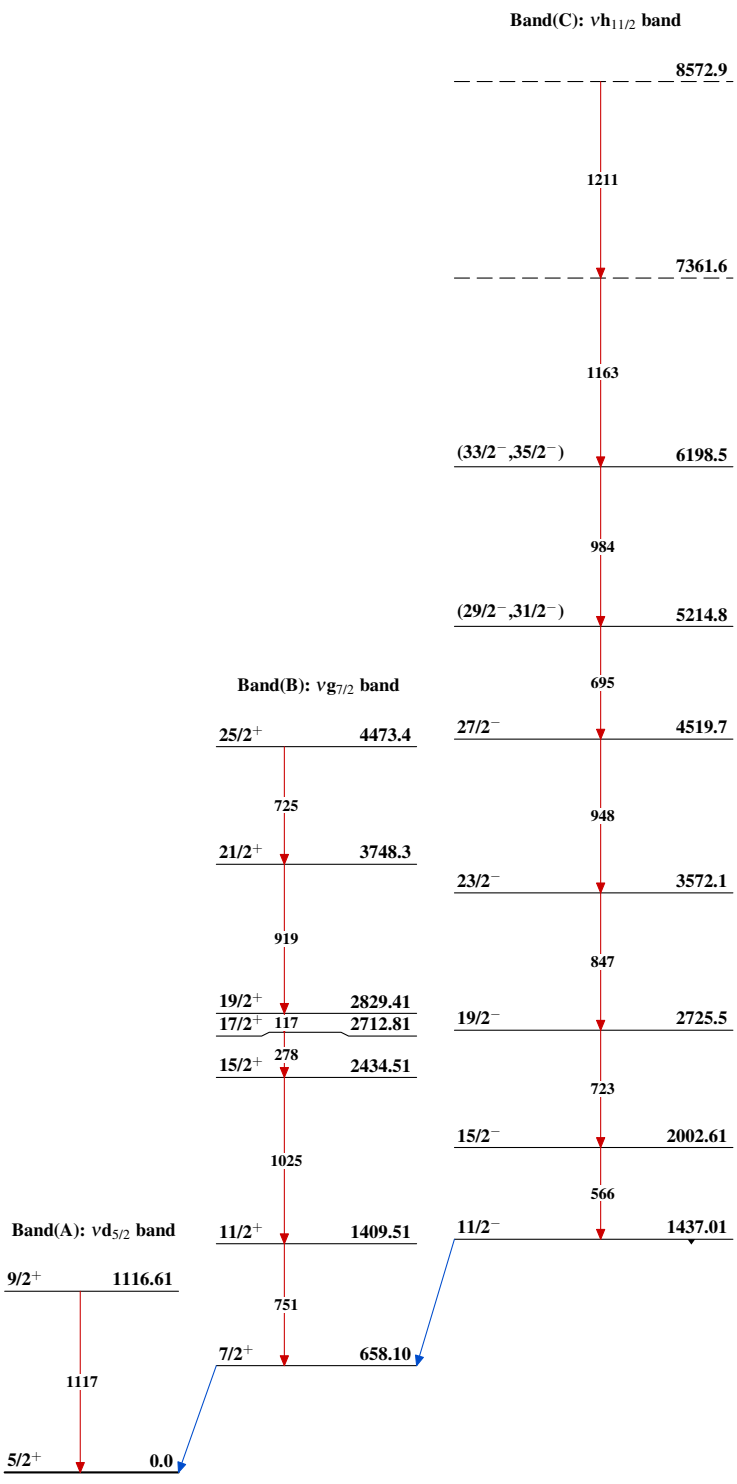
$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{97}_{42}Mo_{55}$

^{82}Se(^{18}O,3nγ) 2004Ch18



$^{97}_{42}Mo_{55}$