^{24}Mg(^{32}S,2$\alpha\gamma$),(^{32}S,^{8}Beγ) 1996Le03,2001Th09

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 179, 1 (2022)	30-Nov-2021

Also includes ^{24}Mg(^{28}Si,2p2nγ) from 2004Br42.

1996Le03,2001Th09: E=130 MeV ^{32}S beam was produced from the Tandem XTU accelerator of the Legnaro National Laboratory (LNL). Target was 400 μg/cm^2 self-supporting Mg. γ rays were detected with the GASP 4π array of 40 Compton-suppressed large-volume Ge detectors and an inner ball of 80 BGO elements; charged particles were detected with the 4π ISIS array of 40 ΔE-E Si telescopes. Measured Eγ, $\gamma\gamma\gamma$-coin, $\gamma\gamma\alpha$-coin. Deduced levels, g.s. band. Comparisons with shell-model calculations.

2001Th09 used the data of 1996Le03 to search for γ-coincidences with ^{8}Be. The analysis indicated enhanced population of the deformed side band in the ^{8}Be channel. Enhanced Hauser-Feshbach calculations. The level scheme including γ-ray and level energies, and the negative-parity side band in 2001Th09 is taken by the authors from 1998Br34 of the same lab in ^{28}Si(^{28}Si,2$\alpha\gamma$) and only the part from the work of 1996Le03 and 2001Th09 are present here in this dataset. 2001Th09 report the enhancement of 531γ and 2200γ from side band for the particle trigger on ^{8}Be.

2004Br42: ^{24}Mg(^{28}Si,2p2nγ) E=115 MeV at LNL. Measured γ, $\gamma\gamma\gamma$-coin, and Doppler-shift attenuation using GASP. Deduced $T_{1/2}$ for 1858 level.

^{48}Cr Levels

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$[#]
0[@]	0$^+$	
752.0[@] *10*	2$^+$	
1858.0[@] *15*	4$^+$	1.21 ps *13*
3445.0[@] *18*	6$^+$	
5189.1[@] *20*	8$^+$	
7063.1[@] *23*	10$^+$	
8410.1[@] *25*	12$^+$	
10281[@] *3*	14$^+$	
13310[@] *3*	16$^+$	
15732 *3*	(16$^+$)	

[†] From a least-squares fit to γ-ray energies, assuming ΔEγ=1 keV.

[‡] From comparison to full fp spherical shell model calculations and band assignments (1996Le03). When considered in Adopted Levels, assignments listed as firm in this dataset will be placed inside parentheses if there is no direct experimental evidence from other studies.

[#] From DSAM line-shape analysis in 2004Br42 using narrow gate on transition below (NGTB) procedure.

[@] Band(A): g.s. (yrast) band (1996Le03).

γ(^{48}Cr)

E$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
752	752.0	2$^+$	0	0$^+$	
1106	1858.0	4$^+$	752.0	2$^+$	
1347	8410.1	12$^+$	7063.1	10$^+$	Eγ: 1343 in the level scheme in FIG.2 of 1996Le03 could be a misprint.
1587	3445.0	6$^+$	1858.0	4$^+$	
1744	5189.1	8$^+$	3445.0	6$^+$	
1871	10281	14$^+$	8410.1	12$^+$	
1874	7063.1	10$^+$	5189.1	8$^+$	
3029	13310	16$^+$	10281	14$^+$	
5450	15732	(16$^+$)	10281	14$^+$	

[†] From 1996Le03.

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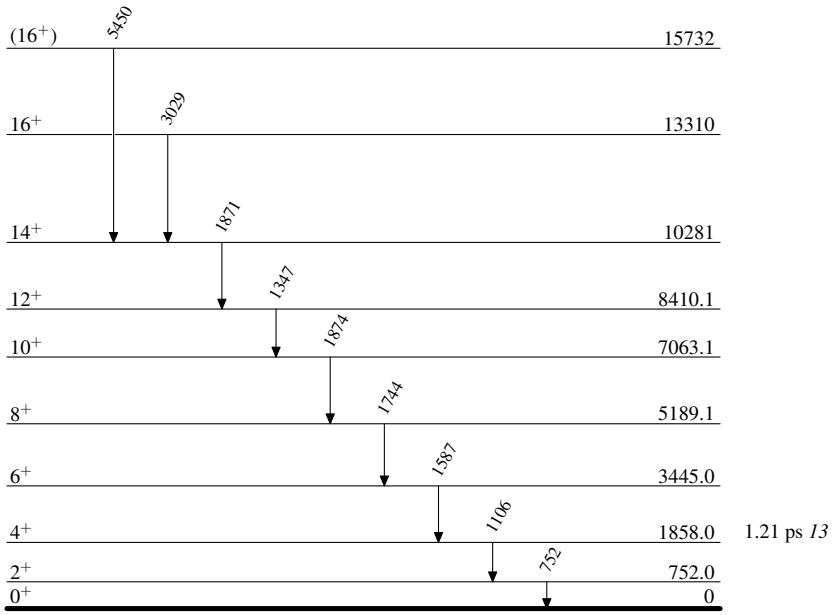
Level Scheme



$^{48}_{24}Cr_{24}$

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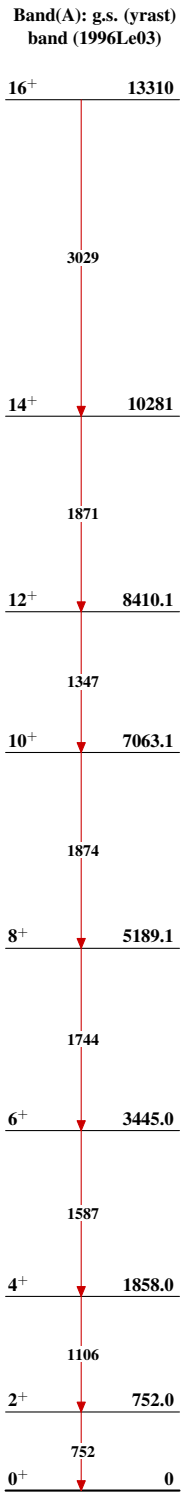

$^{48}_{24}Cr_{24}$