^{34}S(^{16}O,2nγ) 1975Ha04

Type	Author	History Citation	Literature Cutoff Date
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1975Ha04: E=30-36 MeV ^{16}O beams were produced from the Universite de Montreal EN Tandem accelerator. Targets were ≈500 μg/cm^2 CdS (85.6% in ^{34}S) on thick Ni backings (≈120 μg/cm^2 on 0.5 mg/cm^2 Ni backing for lifetime measurements). γ rays were detected with Ge(Li) detectors (θ=+90°,−55°); neutrons were detected with a scintillator (θ=18°). Measured Eγ, Iγ, $\gamma\gamma$-coin, nγ-coin, $\gamma(\theta)$, recoil distance with a plunger, excitation functions. Deduced levels, J, π, $T_{1/2}$, γ-ray multipolarities and mixing ratios, transition strengths, deformation parameters.

1979Ha45: E=34 MeV ^{16}O beam was produced from the Aarhus University EN tandem. Target was 480 μg/cm^2 CsS (91.2% enriched) on a Au backing. γ rays were detected with two coaxial Ge(Li) detectors. Measured $\gamma(\theta)$. Deduced γ ray multipolarity. 1979Ha45 state that their results for 752.3γ and 1106.5γ agree with those in 1975Ha04, but no data from this reaction for those transitions are given. 1979Ha45 report data mainly from ^{40}Ca(^{10}B,npγ). See details in that datasets.

^{48}Cr Levels

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$[#]	Comments
0.0	0$^+$		
752.31 *20*	2$^+$	11.6 ps *15*	$T_{1/2}$: this value from 1975Ha04 is discrepant with those from RDM in other (HI,xnγ) measurements (see Adopted Levels). 1979Ek03 from ^{36}Ar(^{14}N,npγ) explain that this discrepancy might be due to a restriction imposed by 1975Ha04 on normalization constants for obtaining intensity ratio in RDM. Without that restriction, the re-analysis by 1979Ek03 of the data from 1975Ha04 gives $T_{1/2}$=8.7 ps *24*, which is in agreement with results from other studies.
1858.8 *3*	4$^+$	<3.5 ps	
3533.8 *7*	4$^{(-)}$		J$^\pi$: 6$^+$ from 1975Ha04 and 6$^-$ from 1979Ha45, based on 1675$\gamma(\theta)$ showing a quadrupole character. But note that their 1675$\gamma(\theta)$ data are also consistent with a ΔJ=0 dipole character.
4064.4 *7*	5$^{(-)}$		J$^\pi$: (8$^+$) from 1975Ha04, 7$^-$ from 1979Ha45.

[†] From a least-squares fit to γ-ray energies.
[‡] From Adopted Levels. Assignments from this dataset are given under comments if discrepant.
[#] From recoil-distance method (1975Ha04).

γ(^{48}Cr)

E$_\gamma$[†]	I$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[‡]	δ[‡]	Comments
530.6 *2*	16	4064.4	5$^{(-)}$	3533.8	4$^{(-)}$	D+Q	−0.36 *+28−61*	A_2=+0.31 *22* (1975Ha04).
752.3 *2*	100	752.31	2$^+$	0.0	0$^+$	E2[#]		A_2=+0.24 *3*, A_4=−0.10 *3* (1975Ha04).
1106.5 *2*	59	1858.8	4$^+$	752.31	2$^+$	E2[#]		A_2=+0.26 *3*, A_4=−0.08 *3* (1975Ha04).
1674.9 *6*	23	3533.8	4$^{(-)}$	1858.8	4$^+$			A_2=+0.32 *5*, A_4=−0.08 *5* (1975Ha04). A_2=+0.25 *5*, A_4=−0.05 *5* (1979Ha45).

[†] From 1975Ha04.
[‡] From $\gamma(\theta)$ in 1975Ha04, unless otherwise noted.
[#] Q (ΔJ=2) from $\gamma(\theta)$, M2 ruled out by RUL.

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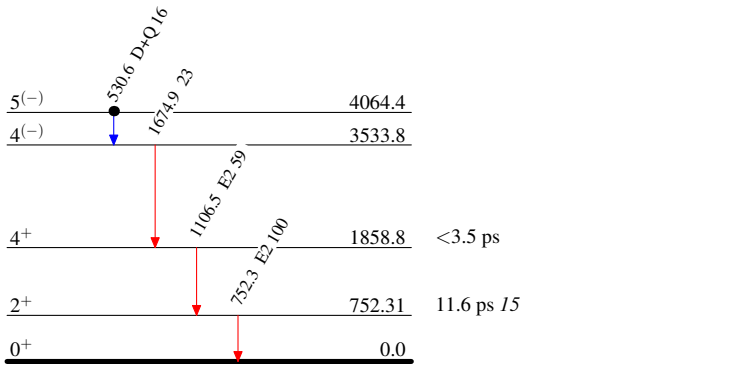
Level Scheme

Intensities: Relative I_γ



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