

$^{96}\text{Zr}(^{16}\text{O},3n\gamma)$ 1978St01

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. Kumar(a), J. Chen(b) and F. G. Kondev		NDS 137, 1 (2016)	31-May-2016

1978St01: E(^{16}O)=56 MeV, FN Tandem Van de Graaff accelerator. Target: ≈ 3.6 mg/cm². Detectors: Two Ge(Li). Measured: E_γ , I_γ , $\gamma(\theta)$, linear polarization.

 ^{109}Cd Levels

E(level) [†]	J ^π [‡]	E(level) [†]	J ^π [‡]	E(level) [†]	J ^π [‡]	E(level) [†]	J ^π [‡]
0.0	5/2 ⁺	985.0 9	15/2 ⁻	3058.0 11	21/2 ⁺	4020.0 12	27/2 ⁻
203.0 5	7/2 ⁺	1821.0 10	19/2 ⁻	3342.0 12	25/2 ⁻	4245.0 13	29/2 ⁺
463.0 7	11/2 ⁻	2861.0 11	23/2 ⁻	3523.0 12	25/2 ⁺		

[†] From a least-squares fit to E_γ ,

[‡] From deduced γ -ray transition multiplicities.

 $\gamma(^{109}\text{Cd})$

E_γ [†]	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [‡]	Comments
203.0 5	100	203.0	7/2 ⁺	0.0	5/2 ⁺		
260.0 5	96.1 16	463.0	11/2 ⁻	203.0	7/2 ⁺	M2	Mult.: $A_2/A_0=+0.045$ 6, $A_4/A_0=-0.005$ 6, $\text{pol}=-0.13$ 5.
465.0 5	8.4 4	3523.0	25/2 ⁺	3058.0	21/2 ⁺	E2	Mult.: $A_2/A_0=+0.303$ 16, $A_4/A_0=-0.109$ 19, $\text{pol}=+0.25$ 9.
481.0 5	1.9 5	3342.0	25/2 ⁻	2861.0	23/2 ⁻	(M1+E2)	Mult.: $A_2/A_0=-0.25$ 4, $A_4/A_0=+0.12$ 5 $\text{pol}=-0.5$ 4.
522.0 5	74.9 17	985.0	15/2 ⁻	463.0	11/2 ⁻	E2	Mult.: $A_2/A_0=+0.304$ 10, $A_4/A_0=-0.094$ 11, $\text{pol}=+0.49$ 4.
662.0 5		3523.0	25/2 ⁺	2861.0	23/2 ⁻		
722.0 5	6.6 5	4245.0	29/2 ⁺	3523.0	25/2 ⁺	E2	Mult.: $A_2/A_0=+0.255$ 20, $A_4/A_0=-0.111$ 26, $\text{pol}=+29$ 15.
836.0 5	59.4 13	1821.0	19/2 ⁻	985.0	15/2 ⁻	E2	Mult.: $A_2/A_0=+0.284$ 8, $A_4/A_0=-0.079$ 8, $\text{POL}=+0.51$ 4.
1040.0 5	19.9 7	2861.0	23/2 ⁻	1821.0	19/2 ⁻	E2	Mult.: $A_2/A_0=+0.295$ 15, $A_4/A_0=-0.096$ 18, $\text{pol}=+0.44$ 12.
1159.0 5	3.5 4	4020.0	27/2 ⁻	2861.0	23/2 ⁻	E2	Mult.: $A_2/A_0=+0.26$ 5, $A_4/A_0=-0.10$ 6, $\text{pol}=+1.3$ 9.
1237.0 5	16.3 7	3058.0	21/2 ⁺	1821.0	19/2 ⁻	E1+M2	Mult.: $A_2/A_0=-0.257$ 15, $A_4/A_0=-0.005$ 17, $\text{pol}=+0.4$ 3. -0.16 $\leq\delta\leq$ 0.06 from pol (1978St01).

[†] As given in 1978St01, ΔE_γ is assumed by evaluators.




[‡] As given in 1978St01, based on angular distributions co-efficients and linear polarization measurements.

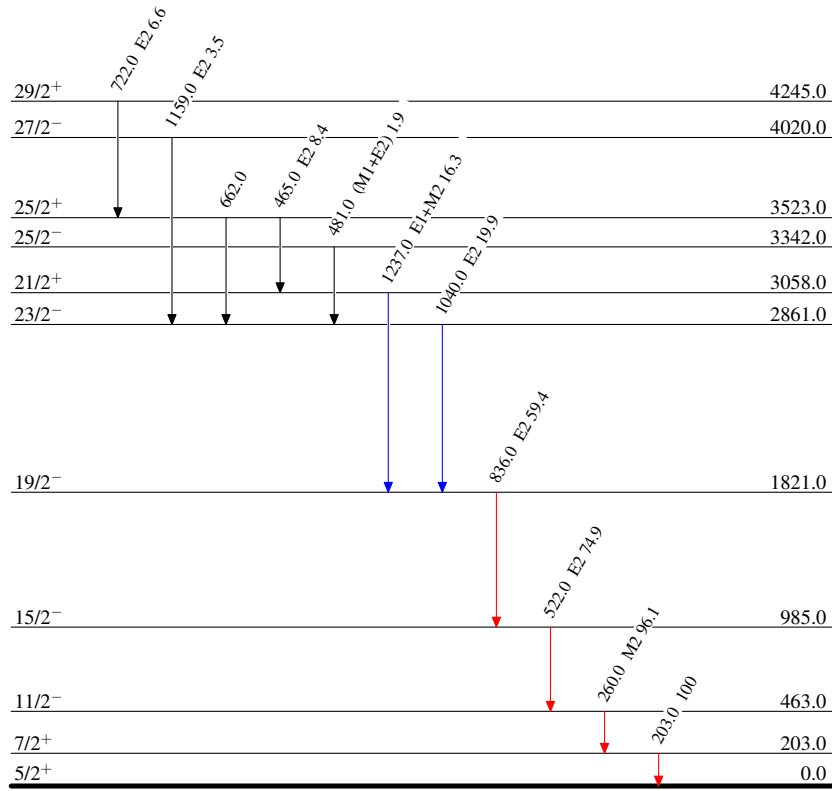
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Level Scheme

Intensities: Relative I_γ

Legend

-  $I_\gamma < 2\% \times I_\gamma^{\max}$
-  $I_\gamma < 10\% \times I_\gamma^{\max}$
-  $I_\gamma > 10\% \times I_\gamma^{\max}$

 $^{109}_{48}\text{Cd}_{61}$