

$^{60}\text{Ni}(\alpha,2n\gamma),(^3\text{He},n\gamma)$ 1976Br33,1977BrYO

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Alan L. Nichols, Balraj Singh, Jagdish K. Tuli		NDS 113, 973 (2012)	15-Apr-2012

1976Br33: $E(\alpha)=28-35$ MeV, measured $E\gamma, I\gamma, \gamma\gamma, \gamma\gamma(t)$ at $E(\alpha)=31$ MeV, $\gamma(\theta)$ at $E(\alpha)=30$ MeV. $E(^3\text{He})=10$ MeV, measured $E\gamma, I\gamma$.

1977BrYO: $E(\alpha)=30$ MeV, lifetimes by DSAM.

1977HuZN: $^{60}\text{Ni}(^3\text{He},n\gamma)$ $E=8$ MeV. Measured $n\gamma$ coin, lifetime by centroid-shift method.

Data are from 1976Br33, unless stated otherwise.

^{62}Zn Levels

E(level) [†]	J^π [‡]	$T_{1/2}$ [#]	Comments
0.0	0 ⁺		
954.0 4	2 ⁺	1.7 ps +7-14	$T_{1/2}$: other: ≥ 0.7 ps (1977HuZN).
1804.8 4	2 ⁺		
2186.3 6	4 ⁺	1.0 ps 7	$T_{1/2}$: other: ≥ 0.35 ps (1977HuZN).
2384.8 6	3 ⁺		
2743.5 7	(4 ⁺)		
3586.5? 12			
3707.6 8	6 ⁽⁺⁾	0.17 ps +14-7	
4043.3? 12			
4903.6 13	(7)	0.7 ps +7-3	

[†] From least-squares fit to $E\gamma$ data.

[‡] As proposed in 1976Br33, based on $\gamma(\theta)$ data and lifetimes.

[#] From DSAM (1977BrYO).

$\gamma(^{62}\text{Zn})$

E_γ [†]	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [‡]	δ [‡]	Comments
557.1 5	<20	2743.5	(4 ⁺)	2186.3	4 ⁺			I_γ : total intensity for the doublet.
579.9 5	5 1	2384.8	3 ⁺	1804.8	2 ⁺			
843 1		3586.5?		2743.5	(4 ⁺)			E_γ : unresolved from the 844 γ in ^{27}Al .
850.7 5	13 1	1804.8	2 ⁺	954.0	2 ⁺	(M1+E2) [#]	-1.2 +5-9	$A_2=-0.13$ 8; $A_4=0.02$ 10
939 1		2743.5	(4 ⁺)	1804.8	2 ⁺			E_γ : weak multiplet γ ray.
953.8 5	100 10	954.0	2 ⁺	0.0	0 ⁺	(E2)		$A_2=+0.08$ 1; $A_4=0.00$ 1 Additional information 1.
1196 1	12 2	4903.6	(7)	3707.6	6 ⁽⁺⁾	D		$A_2=-0.24$ 1; $A_4=0.0$ 1 E_γ : unresolved from 1194 γ in ^{62}Cu , not seen in ($^3\text{He},n\gamma$).
1232.2 5	50 5	2186.3	4 ⁺	954.0	2 ⁺	E2		$A_2=+0.25$ 2; $A_4=-0.07$ 3 Additional information 3.
1400@		3586.5?		2186.3	4 ⁺			
1431 1		2384.8	3 ⁺	954.0	2 ⁺			E_γ : unresolved from 1428 γ in ^{59}Ni and 1430 γ in ^{62}Cu .
1521.3 5	18 2	3707.6	6 ⁽⁺⁾	2186.3	4 ⁺	E2		$A_2=+0.28$ 1; $A_4=-0.10$ 2 Additional information 4.
1805.0 5	8.5 9	1804.8	2 ⁺	0.0	0 ⁺	(E2) [#]		$A_2=+0.23$ 3; $A_4=0.00$ 3 Additional information 2.
1857 1	9 2	4043.3?		2186.3	4 ⁺			E_γ : unresolved from 1861 γ in ^{63}Cu .

Continued on next page (footnotes at end of table)

$^{60}\text{Ni}(\alpha,2n\gamma),(^3\text{He},n\gamma)$ 1976Br33,1977BrYO (continued) $\gamma(^{62}\text{Zn})$ (continued)

† From 1976Br33 at 55°, $E(\alpha)=30$ MeV; uncertainty in intensity is 10%, except as noted.

‡ From $\gamma(\theta)$ data and RUL(1976Br33).

$\Delta J=2$, Q or $\Delta J=1$, D+Q from $\gamma(\theta)$, parity from level scheme.

@ Placement of transition in the level scheme is uncertain.

