
 $^{70}\text{Ge}(\alpha,2n\gamma), ^{72}\text{Ge}(\alpha,4n\gamma)$ **1970Li11,1973Wy01,1974Dr02**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	D. Abriola(a), A. A. Sonzogni		NDS 111,1 (2010)	1-May-2009

($\alpha,2n\gamma$): E=25-35 MeV; ($\alpha,4n\gamma$): E=60-70 MeV, Ge(Li) detector, E γ , I γ , excit function, $\gamma(\theta)$, $\gamma(t)$, delayed coincidence of γ with the beam burst ([1970Li11](#)).

($\alpha,2n$): E=27.5 MeV, Si(Li) detector, in-beam ce measurements ([1970Wy01](#),[1974Dr02](#)).

^{72}Se Levels

Placement of levels is based on the assumption that the observed γ 's are from a cascade in a probable quasirotational band ([1970Li11](#)).

E(level)	J $^{\pi \dagger}$	T $_{1/2}^{\ddagger}$	Comments
0	0 $^+$		
862.0 <i>I</i> ₁₀	2 $^+$	<0.83 ns	
936.0 <i>I</i> ₅	0 $^+$	19.3 ns <i>4</i>	T $_{1/2}$: by delayed coincidence of conversion electrons with the beam burst (1974Dr02).
1637.0 <i>I</i> ₁₅	4 $^+$	<0.83 ns	
2467.0 <i>I</i> ₁₈	6 $^+$	<0.83 ns	

\dagger Four-point $\gamma(\theta)$'s consistent with stretched E2 transitions between the states. T $_{1/2}$ consistent with enhanced E2 rates ([1970Li11](#)).

Parities are from $\alpha(K)\exp$ values, and spins are consistent with $\alpha(K)\exp$ values ([1973Wy01](#)).

\ddagger From prompt coincidence with beam burst ([1970Li11](#)), except where noted.

$\gamma(^{72}\text{Se})$

E $_{\gamma}^{\dagger}$	I $_{\gamma}^{\dagger}$	E $_i$ (level)	J $^{\pi}_i$	E $_f$	J $^{\pi}_f$	Mult. ‡	Comments
775 <i>I</i>	65 <i>I</i> ₁₀	1637.0	4 $^+$	862.0	2 $^+$	(E2)	$\alpha(K)\exp=79\times10^{-5}$ <i>I</i> ₇
830 <i>I</i>	42 <i>I</i> ₁₀	2467.0	6 $^+$	1637.0	4 $^+$	(E2)	$\alpha(K)\exp=56\times10^{-5}$ <i>I</i> ₇
862 <i>I</i>	100 <i>I</i> ₁₀	862.0	2 $^+$	0	0 $^+$	(E2)	$\alpha(K)\exp=54\times10^{-5}$ <i>I</i> ₁₀
							$\alpha(K)\exp$: value for assumed E2 used for normalization of other $\alpha(K)\exp$ measurements.
936.0 <i>I</i> ₅	<2	936.0	0 $^+$	0	0 $^+$	E0	K/L=8.1 <i>3</i> ; $\alpha(K)\exp\geq1.4$ (1974Dr02)
							Mult.: from T $_{1/2}$ and lower limit of $\alpha(K)\exp$ (1974Dr02).

\dagger From ($\alpha,2n\gamma$) at E=29.5 MeV ([1970Li11](#)).

\ddagger Four-point $\gamma(\theta)$ measurements are consistent with stretched E2 transitions. $\alpha(K)\exp$ measurements ([1973Wy01](#)) indicate E2, M1.

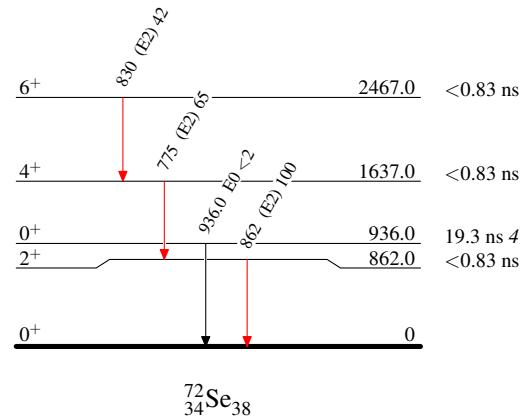
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Legend

Level Scheme

Intensities: Relative I_γ

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

 $^{72}_{34}\text{Se}_{38}$