
 $^{12}C(n,n')$ 1985Me16,1990Aj01

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, J. E. Purcell and C. G. Sheu		NP A968,71 (2017)	1-Jan-2017

- 1965Ha21: $^{12}C(n,n)$ E=17-21 MeV, measured $\sigma(NT)(E)$, $\sigma(E,\theta)$.
- 1968Bo34: $^{12}C(n,n),(n,n')$ E=14-25 MeV, measured $\sigma(E)$.
- 1969Gr30: $^{12}C(n,n),(n,n'),(n,n')3\alpha$ E=14 MeV, measured $\sigma(E_{N'},\theta)$. ^{12}C levels deduced level-width, $\beta(L)$.
- 1970De14: $^{12}C(n,n),(n,n')$ E=17-20.5 MeV, measured $\sigma(E,E_{N'},\theta)$. Deduced optical model parameters.
- 1971Bo07: $^{12}C(n,n)$ E=4.0-5.6 MeV, measured $\sigma(E,\theta)$.
- 1971Sp01: $^{12}C(n,n),(N,N'\gamma)$ E=15.0 MeV, measured $\sigma(\theta)$, $\sigma(E_N,E_\gamma,\theta_{N'\gamma})$. Deduced neutron spin-flip probability.
- 1972Bo03: $^{12}C(n,n),(n,n')$ E=14.1 MeV, measured $\sigma(\theta)$. Deduced optical model parameters.
- 1972Bu20: $^{12}C(n,n)$ E=2-4 MeV, measured asymmetry(E).
- 1972Dr03: $^{12}C(\text{pol. } n,N)$ E=1.9-5.2 MeV, measured polarization $P(E,\theta)$, $\sigma(E,\theta)$.
- 1972Ho01: $^{12}C(n,n)$ E=2-5 MeV, measured $P(E,\theta=50^\circ)$.
- 1972Na03: $^{12}C(n,n)$ E=5.5-12.5 MeV, measured analyzing power(E).
- 1972Ri01: $^{12}C(n,n)$ E=4.8 GeV/c, measured $\sigma(\theta)$.
- 1973Ab07: $^{12}C(n,n)$ E=1.98-4.64 MeV, measured $\sigma(E,\theta)$.
- 1973Fa06: $^{12}C(n,n)$ E=2.1-4.7 MeV, measured $\sigma(E)$, $\sigma(E,\theta)$.
- 1973Ho39: $^{12}C(n,n)$ E=2 to 5 MeV, $\theta_{lab}=20^\circ$ to 150° , measured $P(E,\theta)$, R-function, phase-shift analyses.
- 1973Kn06: $^{12}C(n,n)$ E=2.63 MeV, measured total σ , $\sigma(\theta)$, N-polarization. Deduced phase shifts.
- 1973Ve03: $^{12}C(n,n),(n,n')$ E=7.20,7.35,7.73,8.20,9.00 MeV, measured $\sigma(E_N,E_{N'},\theta)$.
- 1974Po03: $^{12}C(N,N'\gamma)$ E=14.9 MeV, measured N- γ -coin.
- 1975Ko27: $^{12}C(n,n)$ E=14.6 MeV, measured $\sigma(\theta)$.
- 1976Ca13: $^{12}C(\text{pol. } n,N)(\text{pol. } n,N')$ E=14.2 MeV, measured angular distribution of analyzing power In elastic, inelastic scattering, $A(\theta)$.
- 1976Gi11: $^{12}C(n,n),(n,n')$ E=9-15 MeV, measured $\sigma(E,\theta)$, absolute $\sigma(E)$.
- 1978Me12: $^{12}C(n,n),(n,n')$ E=14 MeV, measured $\sigma(\theta)$, $\theta=150-180^\circ$.
- 1979Ko26: $^{12}C(n,n)$ E=0.51,0.68 MeV, measured small angle scattering. Deduced coherent lengths for bound atoms.
- 1979Sm08: $^{12}C(n,n)$ E=1.5-4.0 MeV, measured total $\sigma(E)$, $\sigma(\theta)$. R-matrix analysis.
- 1980Th07: $^{12}C(n,n),(n,n')$ E=15-18.25 MeV, measured $\sigma(E,\theta)$, spin-flip probability $S(\theta)$. $^{12}C(\text{pol. } n,N)$ E=15.85 MeV, measured polarization $P(\theta)$, analyzing power $A(\theta)$, spin-flip analyzing power vs θ .
- 1981Gu12: $^{12}C(n,n),(N,N')$ E=14.7 MeV, measured $\sigma(E_N,\theta)$, integrated σ .
- 1981Sa39: $^{12}C(n,n),(n,n')$ E=11.6 MeV, measured $\sigma(\theta)$. DWBA, Hauser-Feshbach analyses.
- 1982Fi08: $^{12}C(n,n),(n,n')$ E=24 MeV, measured $\sigma(E_N)$.
- 1982Po05: $^{12}C(n,n)$ E=0.5,1,2 MeV, measured $\sigma(\text{total})$. Deduced effective range approximation parameters.
- 1983Da22: $^{12}C(n,n)$ E=7-15 MeV, measured $\sigma(\theta)$. Deduced spherical optical model parameters.
- 1983Hu14: $^{12}C(n,n),(n,n')$ E=14.1,14.5 MeV, measured $\sigma(\theta)$.
- 1983To19,1983Wo02: $^{12}C(n,n),(n,n')$ E=8.9-14.9 MeV, measured $A(E,\theta)$. Deduced optical potential parameters. ^{12}C level deduced quadrupole deformation.
- 1985Fi09: $^{12}C(n,n),(n,n')$ E=20-26 MeV, measured $\sigma(\theta)$. Deduced model parameters.
- 1985Me16: $^{12}C(n,n),(n,n')$ E=20.8,22,24,26 MeV, measured $\sigma(\theta)$. ^{12}C levels deduced deformation parameters, K, π assignments.
- 1985To02: $^{12}C(\text{pol. } n,N)$ E=8.91-12 MeV, measured $\sigma(\theta)$, analyzing power vs θ , phase shifts, $\sigma(E)$.
- 1986Sh33: $^{12}C(n,n),(n,n')$ E=threshold-20 MeV, compiled evaluated neutron induced reaction data. R-matrix theory.
- 1986Wo01: $^{12}C(n,n)$ E=30.3,40.3 MeV, measured $\sigma(\theta)$. Deduced optical model parameters, real volume integrals.
- 1986Za01: $^{12}C(n,n)$ E=50.4 MeV, measured σ .
- 1987Hi03: $^{12}C(n,n)$ E \leq 22 MeV, measured total, $\sigma(E)$, transmission.
- 1987To03,1987To07,1993Ch23: $^{12}C(\text{pol. } n,N)$ E=15.6-17.35 MeV, measured $\sigma(E_N)$, analyzing power vs E,θ . Deduced potential parameters.
- 1988To01: $^{12}C(\text{pol. } n,N),(\text{pol. } n,N')$ E=18.2 MeV, measured $\sigma(\theta)$, analyzing power vs θ . Deduced reaction σ , ^{12}C recoil kerma factors.
- 1989Oj02: $^{12}C(n,n),(n,n')$ E=16.5-22 MeV, measured $\sigma(E,\theta)$. Deduced optical model potentials papameters. DWBA analysis.
- 1995Zh49: $^{12}C(n,n),(n,n')$ E=14.7 MeV, measured $\sigma(\theta)$.
- 1997Ch39: $^{12}C(n,n),(n,n')$ E=28.2 MeV, measured $\sigma(\theta)$. Deduced optical model parameters. ^{12}C levels deduced quadrupole

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deformation parameter, $B(E2)$.

2003Ki05,2003Ki19: $^{12}C(n,n)$ $E=96$ MeV, measured $\sigma(\theta)$.

2004Os02: $^{12}C(n,n)$ $E=65-225$ MeV; measured $\sigma(\theta)$.

2005Ch58: $^{12}C(n,n)$ $E=7-26$ MeV, compiled, analyzed $\sigma(\theta)$, analyzing power, total σ . ^{13}C deduced level and resonance parameters.

2005Ro29: $^{12}C(\text{pol. } n,N)$ $E=2.2-8.5$ MeV, measured $Ay(\theta)$.

2010We06: $^{12}C(\text{pol. } n,N)$ $E=7.6-12$ MeV.

^{12}C Levels

$E(\text{level})^\dagger$	J^π	Comments
0		
4.4×10^3		$\beta_2 = -0.67$ 4 (1983Wo02).
7.7×10^3		
9.6×10^3		
10.3×10^3		
10.8×10^3	1^-	
11.8×10^3	2^-	
12.7×10^3		
13.4×10^3		
14.1×10^3		
15.1×10^3		
16.1×10^3		

[†] From ([1985Me16](#)) and unpublished references in ([1985Aj01,1990Aj01](#)).