

$^{120}\text{Sn}(\text{p,d})$ 1982Di04,1970Ca01

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	D. M. Symochko, E. Browne, J. K. Tuli		NDS 110,2945 (2009)	1-Dec-2008

1982Di04: E=26.3 MeV; magnetic spectrograph FWHM=40 keV; 98.5% enriched target (363 $\mu\text{g}/\text{cm}^2$ thick).

1970Ca01: E=30 MeV; magnetic spectrograph FWHM=55-70 keV; enriched target ($\approx 2.5 \text{ mg}/\text{cm}^2$ thick).

1982Fi02: E=20 MeV;

1981Cr02 E=90 MeV, polarized beam; semi counter-telescope, FWHM=100 keV.

Other: E=52 MeV (1977Se01).

See also $^{120}\text{Sn}(\text{p,d}),(^3\text{He},\alpha)$ IAS for levels above 14000 keV.

 ^{119}Sn Levels

E(α),S(α) g.s. and 23.9 level are unresolved. C²S values are extracted from $\sigma(\theta)$ to fit with L=0+2 for known J ^{π} .

E(level) [#]	J ^{π} [†]	L [‡]	C ² S ^{&}	Comments
0 [@]	1/2 ⁺		0.52	
23.9 [@]	3/2 ⁺		1.59	E(level): from other work.
88 [@]	11/2 ⁻	5	3.61	
788 [@]	7/2 ⁺	4	5.49	
921	3/2 ⁺ ,5/2 ⁺	2	0.35,0.29	E(level): doublet.
1090 [@]	5/2 ⁺	2	2.58	
1250 <i>IO</i>	1/2 ⁺	0	0.01	
1354 [@]	5/2 ⁺	2	0.90	
1562 <i>IO</i>	3/2 ⁺ ,5/2 ⁺	2	0.08,0.06	
1645 <i>IO</i>	3/2 ⁺ ,5/2 ⁺	(2)		L: assignment is tentative (1982Di04).
1730 <i>IO</i>	3/2 ⁺ ,5/2 ⁺	2	0.10,0.08	
1945 <i>IO</i>				E(level): $\sigma(\theta)$ has no structure, suggesting the peak is an unresolved multiplet.
2120 [@]	1/2 ⁺	0	0.04	
2210	3/2 ⁺ ,5/2 ⁺	2		
2320	3/2 ⁺ ,5/2 ⁺			
2400	9/2 ⁻ ,11/2 ⁻	5		
2470				
2540				
2640	3/2 ⁺ ,5/2 ⁺	2		
2710	1/2 ⁻ ,3/2 ⁻	1		
2840	1/2 ⁻ ,3/2 ⁻	1		
2890	3/2 ⁺ ,5/2 ⁺	2		
3010	3/2 ⁺ ,5/2 ⁺	2		
≈ 5500	7/2 ⁺ ,9/2 ⁺	4	2.20	$\Gamma \approx 1.5 \text{ MeV}$

[†] From Adopted Levels.

[‡] From DWBA analysis.

[#] From 1982Di04 for E(level) up to 2000. From 1970Ca01 for higher levels, except for the 5500 level which is from 1981Cr02.

[@] Value adopted by 1982Di04 from other work for the calibration procedure.

[&] C²S from DWBA analysis with the adiabatic deuteron. Authors assumed $g_{9/2}$ for 5500-keV level potential (1982Di04).