

$^{64}\text{Ni}(\text{p},\text{n})$ [1970Ba64](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen		NDS 178, 41 (2021).	12-Nov-2021

E=2.9-6.3 MeV, pulsed beam, FWHM $\approx$ 10 keV.

Others:

[1983Ma37](#): E=35 MeV. $\sigma(\theta)$ data for analog states of g.s. and 2^+ state in ^{64}Ni . DWBA and coupled-channel analysis.

[1982AnZV](#): E=134 MeV. IAR in ^{64}Cu .

[1979RoZP](#), [1976Le09](#): E=threshold. 2.7 eV and other resonances.

[1976Go23](#): (pol p,n) E=22.8 MeV. Analyzing power and $\sigma(\theta)$ data.

[1975Az03](#): E=17-20 MeV. Data for IAS analyzed.

[1975Ca18](#): E=23 MeV. $\sigma(\theta)$ data for analog of g.s. and 2^+ . DWBA calculations. See also [1972CaYN](#) and [1971Be46](#).

[1971Mo16](#) (also [1969BrZY](#)): E=3.1-3.3 MeV. $\sigma(\theta)$ data for IAR.

[1969Gu07](#) (also [1971Gu12](#)): E=3.5-5.2 MeV. $\sigma(\theta)$ data for IAR.

Cross section data: [1988ZaZX](#) (E=6 MeV), [1987Ho22](#) (analyzed data for E=0.4-5.5 MeV), [1984HeZV](#) (E<6.7 MeV), [1983Se19](#) (E<3.8 MeV), [1983Sa30](#), [1977Ro34](#), [1977Ro33](#) (analyzed data for E $\approx$ 6 MeV), [1972Ta16](#), [1960Pi01](#).

Q value: [1961Va19](#), [1951BI57](#).

 ^{64}Cu Levels

E(level)	J^π	Comments
0	1^+	J^π : from the Adopted Levels.
159 2	(2)	J^π : (0,1).
279 2	(2)	J^π : (0,1).
344 2	(2)	J^π : (0). Adopted J=(1).
364 2	(3)	
575 2	(4)	
610 2	(0)	J^π : (2). Adopted J=2.
663 2	(1)	J^π : (2).
742 2	(3&2)	E(level): doublet (739+746 levels).
878 3	(0)	J^π : (3).
896 3	(3)	
924 3	(2)	J^π : (0,1). Adopted J=1.
1237 3	(2)	J^π : (0,1).
1283 4	(3,4)	
1295 4	(1)	
1316 3	(2,0)	J^π : (1,3).
1352 3	(0,2)	J^π : (3). Adopted J=(3).
1437 3	(1)	J^π : (2,0).
1458 3		
1498 3		
1520 4		
1549 4		
1593 5		
1605 5		
1680 4		
1701 4		
1747 [‡] 4		
1774 4		
1847 4		
1897 4		
1912 4		
1934 5		
1969? 6		
2015 4		
2044 4		

Continued on next page (footnotes at end of table)

$^{64}\text{Ni}(\text{p},\text{n})$ [1970Ba64](#) (continued) ^{64}Cu Levels (continued)

<u>E(level)</u>	<u>E(level)</u>	<u>E(level)</u>	<u>E(level)</u>	<u>J^π[†]</u>
2059 4	2310 5	2502 7	2654 8	
2082 6	2322 5	2522 7	2691 7	
2139 5	2356 5	2531 7	2723 [‡] 7	
2182 5	2380 6	2567 6	2757 7	
2226 6	2388 7	2586 6	≈ 6820 [#]	(0 ⁺) [#]
2262 6	2417 6	2607 7	≈ 8170 [@]	(2 ⁺) [@]
2275 5	2460 6	2631 7		
2295 5	2492 6	2644 8		

[†] Most likely choice from comparison of observed cross section ratio (excited state to g.s.) to calculated ratio (using Hauser-Feshbach analysis). Less likely choices are given under comments. Disagreements with the Adopted J^π values are also given under comments.

[‡] Doublet.

[#] Analog of ^{64}Ni g.s. ([1975Ca18,1983Ma37](#)). Energy from ($^3\text{He},\text{t}$) data.

[@] Analog of first 2⁺ in ^{64}Ni ([1975Ca18,1983Ma37](#)). Energy estimated in [1979Ha35](#) evaluation.