

⁵⁸Ni(⁴⁰Ca,2pn γ): set 1 1994Ar33

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, G. Mukherjee, A. A. Sonzogni		NDS 111, 2555 (2010)	30-Jun-2009

E=180 MeV. Measured E γ , I γ , $\gamma\gamma$ and $\gamma\gamma(\theta)$ (ratio) NORDBALL array comprised of 15 HPGe detectors.
See ⁵⁸Ni(⁴⁰Ca,2pn γ): set 2 (2003Ma24) for a more up-to-date and comprehensive level scheme populated in the same reaction.

⁹⁵Pd Levels

E(level) [†]	J π [‡]	T _{1/2}	Comments
1875.7# 20	21/2 ⁺	13.3 s 3	E(level): from 2003Ma24. T _{1/2} : from Adopted Levels.
2566.4# 20	23/2 ⁺		
2696.7# 20	25/2 ⁺		
4071.0# 20	29/2 ⁺		
4331.4@ 20	31/2 ⁻		
4751.0# 20	33/2 ⁺		
6419.4@ 20	(33/2 ⁻ ,35/2 ⁻)		
7498.1# 20	(35/2 ⁺ ,37/2 ⁺)		
8530.3@ 21			
9016.0# 21			
9481.1?# 21			
9595.3?@ 23			
10037.1?# 21			
10419.1# 22			

[†] From least-squares fit to E γ 's.
[‡] From deduced Asymmetry ratio, R.
Band(A): gamma sequence based on 21/2⁺.
@ Band(B): gamma sequence based on 31/2⁻.

γ (⁹⁵Pd)

Asymmetry ratio R=2I(143°)/[I(79°)+I(101°)].
 $\Delta E\gamma=\pm(0.2-0.5)$ keV is assumed, depending on the energy and intensity of transitions.

E γ	I γ	E _i (level)	J π _i	E _f	J π _f	Mult.	Comments
130.3 2	59 14	2696.7	25/2 ⁺	2566.4	23/2 ⁺		R=0.64 10.
260.4 2	39 14	4331.4	31/2 ⁻	4071.0	29/2 ⁺	(E1)	R=0.71 16. Mult.: from Adopted Levels, Gammas.
382.0 5	8 2	10419.1		10037.1?			
465.1 3	13 3	9481.1?		9016.0			
556.0 3	11 2	10037.1?		9481.1?			
680.0 2	46 15	4751.0	33/2 ⁺	4071.0	29/2 ⁺		R=1.40 39.
690.6 2	78 21	2566.4	23/2 ⁺	1875.7	21/2 ⁺		R=1.12 20.
821.3 5	9 3	2696.7	25/2 ⁺	1875.7	21/2 ⁺		
1065 1	2 1	9595.3?		8530.3			
1374.3 2	100 15	4071.0	29/2 ⁺	2696.7	25/2 ⁺		R=1.47 28.
1517.9 2	29 12	9016.0		7498.1	(35/2 ⁺ ,37/2 ⁺)		

Continued on next page (footnotes at end of table)

 $^{58}\text{Ni}(^{40}\text{Ca},2\text{pn}\gamma)$: set 1 **1994Ar33** (continued) $\gamma(^{95}\text{Pd})$ (continued)




<u>E_γ</u>	<u>I_γ</u>	<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>
2087.9 2	35 13	6419.4	(33/2 ⁻ ,35/2 ⁻)	4331.4	31/2 ⁻
2110.9 2	41 14	8530.3		6419.4	(33/2 ⁻ ,35/2 ⁻)
2747.0 2	15 9	7498.1	(35/2 ⁺ ,37/2 ⁺)	4751.0	33/2 ⁺

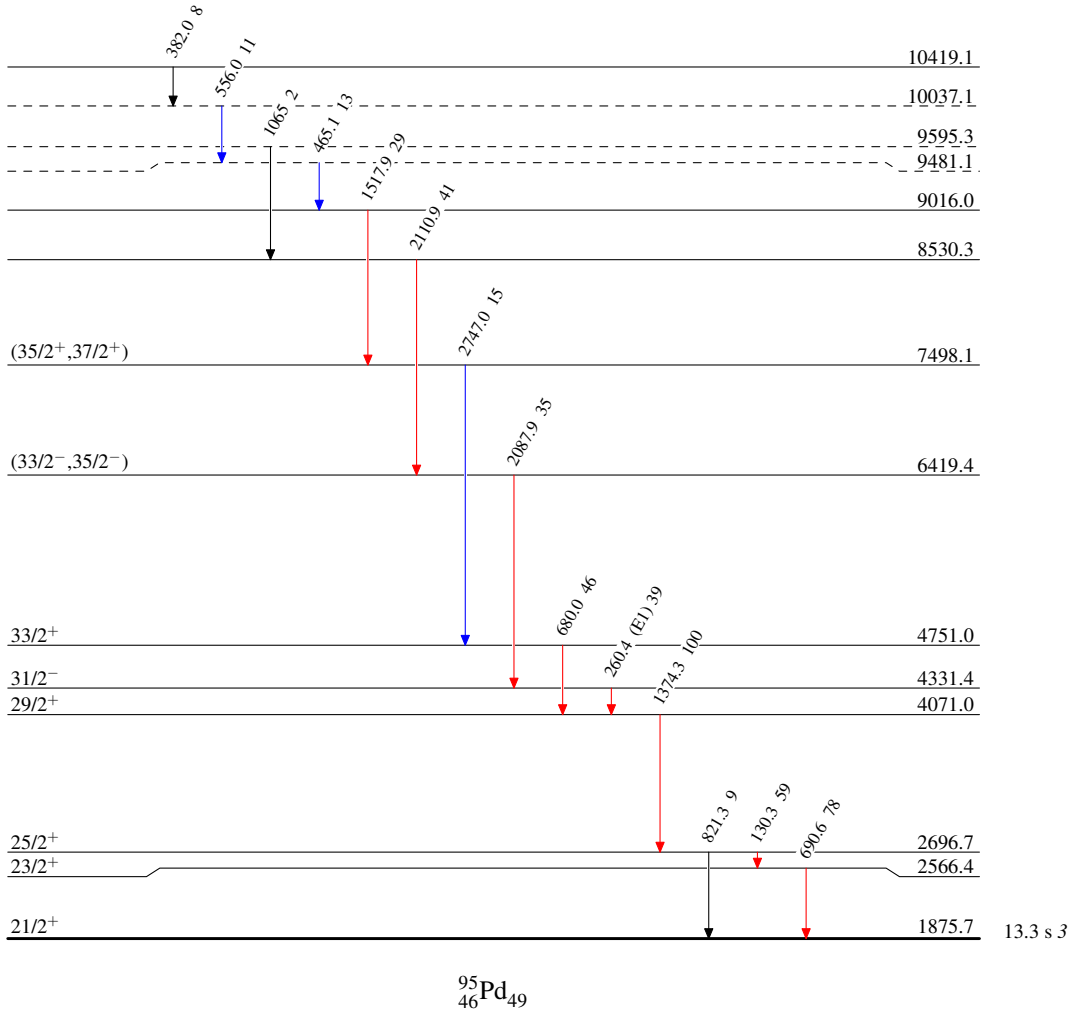
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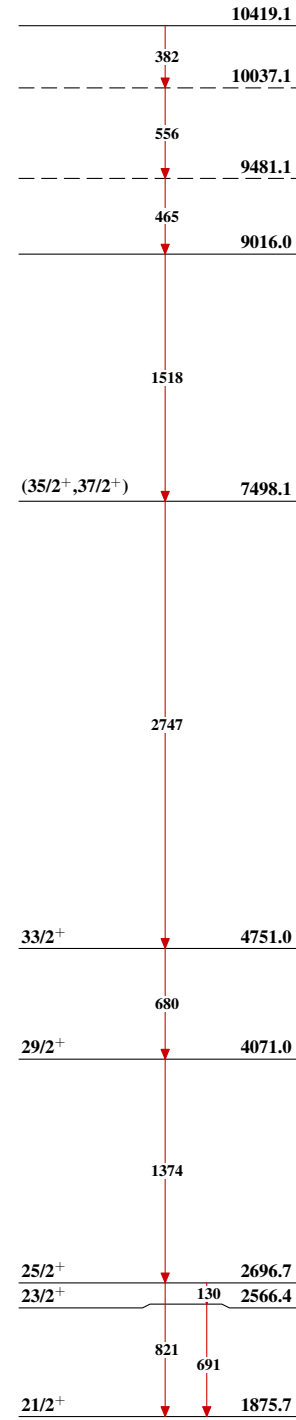
Level Scheme

Intensities: Relative I γ

Legend

-  I γ < 2% \times I γ ^{max}
-  I γ < 10% \times I γ ^{max}
-  I γ > 10% \times I γ ^{max}



$^{58}\text{Ni}(^{40}\text{Ca},2\text{pn}\gamma)$: set 1 1994Ar33Band(A): Gamma sequence based on $21/2^+$ Band(B): Gamma sequence based on $31/2^-$ 