

$^{208}\text{Pb}(^{64}\text{Ni}, ^{64}\text{Ni}'\gamma)$ 1994Pa20

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

1994Pa20 (also 1994Pa32,1995Fo16): E=350 MeV beam from the VICKSI accelerator at HMI Berlin. Target was 30 mg/cm² 98.7% enriched ^{208}Pb . γ rays were detected with the OSIRIS array of 11 Compton-suppressed Ge detectors and 48 BGO inner ball detectors. Measured E_γ , I_γ , $\gamma\gamma$ -coin. Deduced levels, J, π . Shell-model calculations and role of $g_{9/2}$ neutron orbital studied for high spins.

 ^{64}Ni Levels

E(level) [†]	J π [‡]	E(level) [†]	J π [‡]	E(level) [†]	J π [‡]	E(level) [†]	J π [‡]
0.0	0 ⁺	2867.5 5	0 ⁺	3749.7 4	4 ⁽⁻⁾	4532.0 ^{&} 4	7 ⁻
1346.02 10	2 ⁺	3166.4 5	4 ⁺	3849.2 [#] 3	5 ⁻	4962.3 8	(6 ⁻ , 7 ⁻ , 8 ⁻)
2276.82 14	2 ⁺	3396.0 3	4 ⁺	4085.4 4	5 ⁽⁻⁾	5812.4 ^a 7	8 ⁺
2610.32 14	4 ⁺	3560.6 4	3 ⁻	4172.6 [@] 4	6 ⁽⁻⁾		

[†] From a least-squares fit to γ -ray energies.

[‡] From the Adopted Levels.

[#] Possible dominant configuration= $\nu g_{9/2} \nu p_{1/2}$.

[@] Possible configuration= $\nu g_{9/2} \nu p_{3/2} + \nu g_{9/2} \nu f_{5/2}^{-1}$.

[&] Possible configuration= $\nu g_{9/2} \nu p_{3/2} + \nu g_{9/2} \nu f_{5/2}^{-1}$. 1990Fi07 suggest $\nu f_{5/2} \nu g_{9/2}$.

^a Possible configuration= $\nu g_{9/2}^2$.

 $\gamma(^{64}\text{Ni})$

E_γ [†]	I_γ [†]	$E_i(\text{level})$	J π_i	E_f	J π_f
99.6 6	0.3 1	3849.2	5 ⁻	3749.7	4 ⁽⁻⁾
189.0 4	1.2 2	3749.7	4 ⁽⁻⁾	3560.6	3 ⁻
236.5 5	0.5 2	4085.4	5 ⁽⁻⁾	3849.2	5 ⁻
323.4 2	6.6 5	4172.6	6 ⁽⁻⁾	3849.2	5 ⁻
359.4 2	3.1 3	4532.0	7 ⁻	4172.6	6 ⁽⁻⁾
430.3 6	0.5 1	4962.3	(6 ⁻ , 7 ⁻ , 8 ⁻)	4532.0	7 ⁻
452.9 6	0.8 1	3849.2	5 ⁻	3396.0	4 ⁺
583.4 6	0.4 1	3749.7	4 ⁽⁻⁾	3166.4	4 ⁺
785.7 5	1.3 2	3396.0	4 ⁺	2610.32	4 ⁺
930.8 1	29.5 15	2276.82	2 ⁺	1346.02	2 ⁺
1239.0 3	7.2 7	3849.2	5 ⁻	2610.32	4 ⁺
1264.3 1	65.0 20	2610.32	4 ⁺	1346.02	2 ⁺
1280.4 [‡] 5		5812.4	8 ⁺	4532.0	7 ⁻
1284.0 6	0.3 1	3560.6	3 ⁻	2276.82	2 ⁺
1346.0 1	100.0	1346.02	2 ⁺	0.0	0 ⁺
1474.8 5	1.0 2	4085.4	5 ⁽⁻⁾	2610.32	4 ⁺
1521.5 4	1.6 3	2867.5	0 ⁺	1346.02	2 ⁺
1820.4 5	1.0 3	3166.4	4 ⁺	1346.02	2 ⁺
2049.8 4	1.6 4	3396.0	4 ⁺	1346.02	2 ⁺
2214.4 5	1.1 3	3560.6	3 ⁻	1346.02	2 ⁺

[†] From 1994Pa20.

[‡] Uncertainty assigned by the evaluator according to those for other transitions.

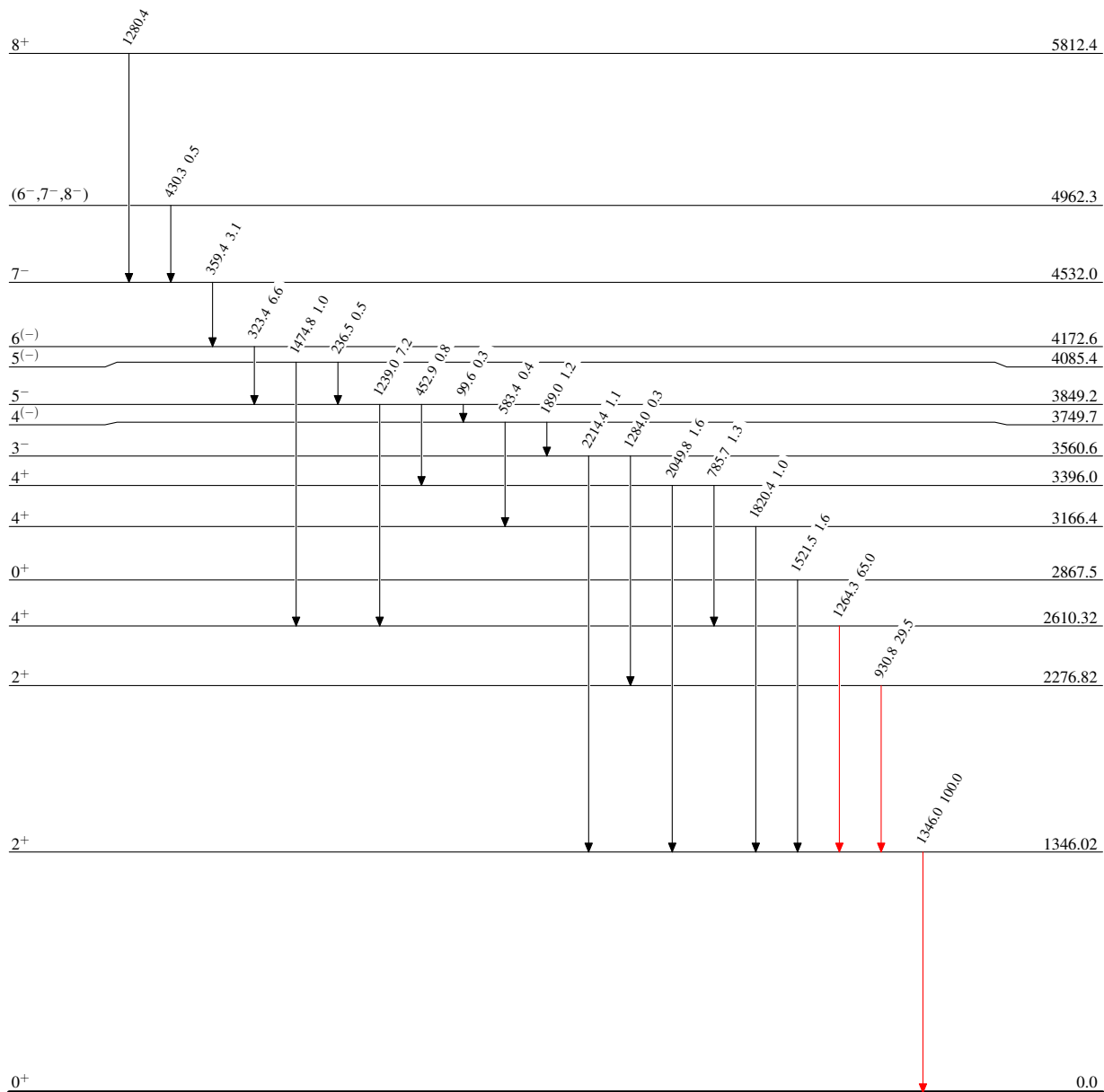
$^{208}\text{Pb}(^{64}\text{Ni}, ^{64}\text{Ni}'\gamma)$ 1994Pa20

Level Scheme

Intensities: Relative I_γ

Legend

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

 $^{64}_{28}\text{Ni}_{36}$