

$^{66}\text{Zn}(^{37}\text{Cl},\text{p}2\text{n}\gamma)$ 1997Ta02

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen		NDS 172, 1 (2021)	31-Jan-2021

1997Ta02: E=130 MeV ^{37}Cl beam was produced from the 15 UD pelletron at the Nuclear Science Centre, India. Target was about 1 mg/cm² isotopically enriched (>99%) ^{66}Zn on a 25 mg/cm² Pb backing. γ rays were detected with the Gamma Detector Array (GDA) of eight Compton-suppressed HPGe detectors and fourteen BGO. Measured $E\gamma$, $I\gamma$, $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ (DCO). Deduced levels, J, π , band structures. In this short communication, the details about $E\gamma$, $I\gamma$, DCO ratios are not given.

All data are from 1997Ta02, unless otherwise noted.

 ^{100}Pd Levels

E(level) [†]	J π [‡]	E(level) [†]	J π [‡]	E(level) [†]	J π [‡]	E(level) [†]	J π [‡]
0.0 ^b	0 ⁺	3438	(8 ⁺) ^{&}	5667 ^d	13 ⁽⁻⁾	9913?#	21 ⁽⁻⁾
665 ^b	2 ⁺	3868 ^b	10 ⁺	5704 ^b	14 ⁺	10101	21 ⁽⁻⁾
1415 ^b	4 ⁺	4052 ^d	9 ⁽⁻⁾	5917	14	11208	22 ⁽⁻⁾
2188 ^b	6 ⁺	4092 ^c	9 ⁽⁻⁾	6457	15 ⁺	11423?#	(23)
2504 ^c	5 ⁻	4144	10	6702 ^d	15 ⁽⁻⁾	12591?#	23 ⁽⁻⁾
2986 ^b	8 ⁺	4760 ^b	12 ⁺	6936 ^b	16 ⁺	13159?#	(24)
3177	8 ⁺ @	4861 ^d	11 ⁽⁻⁾	7642 ^d	17 ⁽⁻⁾	13200?#	24 ⁽⁻⁾
3230 ^c	7 ⁻	5451	(13) ^{+a}	8713 ^d	19 ⁽⁻⁾		

[†] From $E\gamma$ data.

[‡] As proposed by 1997Ta02, unless otherwise stated. The assignments in the Adopted Levels are the same in most cases, except that many are given in parentheses there, and in some cases level energies differ due to reordering of the $\gamma\gamma$ cascades.

Level not supported in other reactions (2001Pe05,2001Zh26 and/or 2000ApZY). The deexciting γ ray is placed differently in other reactions and in the Adopted Levels, Gammas.

@ From the Adopted Levels. 1997Ta02 quote 8⁻.

& From the Adopted Levels. 1997Ta02 quote 9.

^a From the Adopted Levels. 1997Ta02 quote 12.

^b Band(A): g.s band.

^c Band(B): $K^\pi=5^-$, $\pi g_{9/2} \otimes \pi p_{1/2}$.

^d Band(C): $K^\pi=9^-$, $\nu h_{11/2} \otimes \nu g_{7/2}$.

 $\gamma(^{100}\text{Pd})$

E_γ	$E_i(\text{level})$	J π_i	E_f	J π_f	E_γ	$E_i(\text{level})$	J π_i	E_f	J π_f
190	3177	8 ⁺	2986	8 ⁺	751.6#	6457	15 ⁺	5704	14 ⁺
261	3438	(8 ⁺)	3177	8 ⁺	770	4861	11 ⁽⁻⁾	4092	9 ⁽⁻⁾
276	4144	10	3868	10 ⁺	773	2188	6 ⁺	1415	4 ⁺
466	5917	14	5451	(13) ⁺	785	6702	15 ⁽⁻⁾	5917	14
479	6936	16 ⁺	6457	15 ⁺	798	2986	8 ⁺	2188	6 ⁺
540	6457	15 ⁺	5917	14	805	5667	13 ⁽⁻⁾	4861	11 ⁽⁻⁾
609 ^{†c}	13200?	24 ⁽⁻⁾	12591?	23 ⁽⁻⁾	809	4861	11 ⁽⁻⁾	4052	9 ⁽⁻⁾
614	4052	9 ⁽⁻⁾	3438	(8 ⁺)	822	4052	9 ⁽⁻⁾	3230	7 ⁻
665	665	2 ⁺	0.0	0 ⁺	862	4092	9 ⁽⁻⁾	3230	7 ⁻
691	5451	(13) ⁺	4760	12 ⁺	876 [‡]	4052	9 ⁽⁻⁾	3177	8 ⁺
717	4861	11 ⁽⁻⁾	4144	10	881	3868	10 ⁺	2986	8 ⁺
726	3230	7 ⁻	2504	5 ⁻	892	4760	12 ⁺	3868	10 ⁺
750.4	1415	4 ⁺	665	2 ⁺	907	5667	13 ⁽⁻⁾	4760	12 ⁺

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$^{66}\text{Zn}(^{37}\text{Cl},\text{p}2\text{n}\gamma)$ 1997Ta02 (continued) $\gamma(^{100}\text{Pd})$ (continued)

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
940	7642	17 ⁽⁻⁾	6702	15 ⁽⁻⁾	1200 ^{†@}	9913?	21 ⁽⁻⁾	8713	19 ⁽⁻⁾
945	5704	14 ⁺	4760	12 ⁺	1232	6936	16 ⁺	5704	14 ⁺
989	3177	8 ⁺	2188	6 ⁺	1383 ^{†a}	12591?	23 ⁽⁻⁾	11208	22 ⁽⁻⁾
1035	6702	15 ⁽⁻⁾	5667	13 ⁽⁻⁾	1388	10101	21 ⁽⁻⁾	8713	19 ⁽⁻⁾
1071	8713	19 ⁽⁻⁾	7642	17 ⁽⁻⁾	1510 ^{†&}	11423?	(23)	9913?	21 ⁽⁻⁾
1089	2504	5 ⁻	1415	4 ⁺	1736 ^{†b}	13159?	(24)	11423?	(23)
1107	11208	22 ⁽⁻⁾	10101	21 ⁽⁻⁾					

[†] 1736-1510-1200 cascade is reordered as 1510-1852-1200-1736 in [2001Pe05](#), 1852-1510-1200-1736 in [2001Zh26](#) and 1510-1200-1736-1852 in [2000ApZY](#). Based on transition intensities, the evaluators have adopted the ordering of [2001Pe05](#) in the Adopted Levels, Gammas. Also the 609-1383-1107-1388 cascade from 13200 level is reordered as 1383-609-1107-1388 in [2001Pe05](#) and [2000ApZY](#), which is also given in the Adopted Levels, Gammas.

[‡] Mult=dipole from $\gamma\gamma(\theta)$ (DCO).

[#] I γ : 15% of I γ (750.4).

[@] Placement from 11653, (22⁺) level in the Adopted Gammas.

[&] Placement from 15015, (25⁺) in the Adopted Gammas.

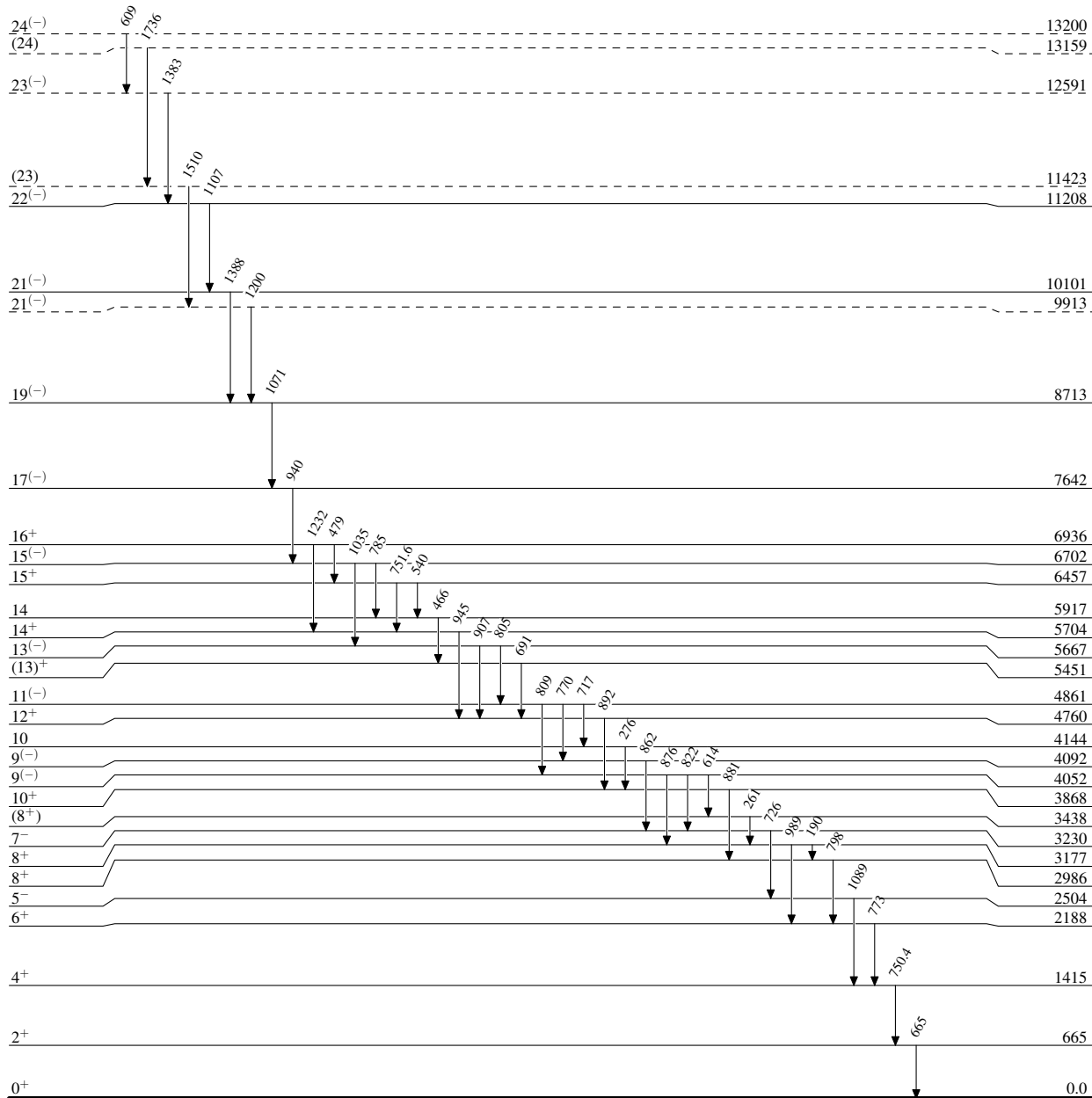
^a Placement from 13205, (25⁻) in the Adopted Gammas.

^b Placement from 10452, (20⁺) in the Adopted Gammas.

^c Placement from 11821, (23⁻) level in the Adopted Gammas.

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Level Scheme



$^{100}_{46}\text{Pd}_{54}$

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