

$^{113}\text{In}(n,\gamma)$: primary gammas **1975Ra07**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 113, 515 (2012)	1-Jan-2012

$J^\pi(^{113}\text{In})=9/2^+$.

$E(n)=\text{th.}$

Measured: γ , $\gamma\gamma$, $\gamma\gamma(t)$, semi.

The thermal-neutron capture state is mainly 4^+ .

Activity: enriched target.

 ^{114}In Levels

$E(\text{level})^\ddagger$	$J^\pi^\dagger$	$T_{1/2}$	$E(\text{level})^\ddagger$	$J^\pi^\dagger$
0	1^+		1201.70 9	$3^-, (3^+, 4)$
190.290 19	5^+		1271.09 5	$3^-, (4)$
221.04 3	(4^+)		1304.17 11	$(4, 5)$
287.730 19	$2^+, (3^+)$	<69 ps	1311.98 7	$(3^-, 4, 5)$
497.162 24	$5^+, (4^+)$	0.15 ns 11	1321.21 7	$(3, 4)$
501.93 3	8^-		1329.17 6	$(6, 5^-, 7)$
536.27 3	7^-		1336.4 3	
574.42 3	$(6)^-$		1348.99 6	$(3, 4, 5)$
627.98 3	$3^+, (4^+, 3)$	<69 ps	1394.41 6	$(4, 5, 6^-)$
641.700 24	7^+	4.3 ns 4	1403.2 3	
687.49 4	$8^+, (7^+, 6^+)$		1425.57 10	
693.39 7	$1^-, 2^-$		1431.69 9	
696.40 4	5^-	<104 ps	1446.5 3	
724.90 4	$3^+, (2^+, 4^+, 3^-)$		1459.2 3	
728.61 5	$4^+, (5^+)$		1476.0 3	
775.28 3	3^-	<139 ps	1484.4 5	
825.76 6	$2^-, (1^-, 2^+, 3^+)$		1525.7 3	
835.71 4	4^-	<139 ps	1531.5 3	
909.71 4	$6^+, (5^+)$		1545.2 3	
969.32 6	$4^+, (3^+, 4^-, 5)$		1557.6 3	
996.7			1576.63 12	
1003.35 4	$6^+, (5^+, 7^+)$		1585.2 6	
1018.6 2	$4^-, (4^+, 3^-)$		1597.5 3	
1019.48 4	$7^+, (6^+, 5^+)$		1605.4 3	
1032.14 4	3^-	<104 ps	1615.8 5	
1036.83 6	$(3, 4, 5^+)$	<208 ps	1651.6 3	
1044.81 6	$7^+, (6^+)$		1678.8 6	
1062.71 6	$3^+, (4^+)$		1695.4 3	
1111.71 5	$3^+, (3^-)$		1710.5 3	
1138.68 9	$(3, 4)$		1729.5 3	
1155.54 6	$3^+, (4^+)$		1740.8 3	
1163.12 8			1794.8 3	
1169.93 6	$(4, 5)$		1827.5 3	
1198.89 6	$4^-, (4^+)$		(7273.5 [#] 3)	

[†] From 1975Ra07 based on configuration arguments, $T_{1/2}$, and γ -ray decay patterns.

[‡] From 1975Ra07. ^{116}In calibration lines are known at best to 0.02 keV; therefore, the evaluator has increased to 0.02 keV the uncertainties that are smaller than this.

[#] To be compared to 7273.8 3 (2011AuZZ).

$^{113}\text{In}(n,\gamma)$: primary gammas **1975Ra07** (continued)

$\gamma(^{114}\text{In})$									
$E_\gamma^\dagger$	$I_\gamma^\#$	$E_i(\text{level})$	E_f	J_f^π	$E_\gamma^\dagger$	$I_\gamma^\#$	$E_i(\text{level})$	E_f	J_f^π
5446.0 12	0.51 7	(7273.5)	1827.5		5937.1 13	0.96 10	(7273.5)	1336.4	
5478.7 13	0.60 12	(7273.5)	1794.8		5954.6 22	0.40 12	(7273.5)	1321.21	(3,4)
5532.7 12	0.81 10	(7273.5)	1740.8		5962.0 24	0.20 10	(7273.5)	1311.98	(3 ⁻ ,4,5)
5544.0 14	0.20 7	(7273.5)	1729.5		5968.2 24	0.20 10	(7273.5)	1304.17	(4,5)
5563.0 16	0.16 6	(7273.5)	1710.5		6002.2 12	3.0 2	(7273.5)	1271.09	3 ⁻ , (4)
5578.1 12	0.70 12	(7273.5)	1695.4		6070.7 20	1.4 6	(7273.5)	1201.70	3 ⁻ , (3 ⁺ ,4)
5595.1 14	0.22 6	(7273.5)	1678.8		6074.4 14	2.1 6	(7273.5)	1198.89	4 ⁻ , (4 ⁺)
5621.9 13	0.38 8	(7273.5)	1651.6		6110.6 15	0.55 15	(7273.5)	1163.12	
5656.9 17	0.18 7	(7273.5)	1615.8		6117.9 14	0.74 11	(7273.5)	1155.54	3 ⁺ , (4 ⁺)
5668.1 14	0.23 7	(7273.5)	1605.4		6135.5 22	0.90 20	(7273.5)	1138.68	(3,4)
5676.0 14	0.36 7	(7273.5)	1597.5		6161.9 21	0.25 15	(7273.5)	1111.71	3 ⁺ , (3 ⁻)
5687.7 18	0.17 8	(7273.5)	1585.2		6211.1 12	1.07 12	(7273.5)	1062.71	3 ⁺ , (4 ⁺)
5697.1 12	0.66 9	(7273.5)	1576.63		6227.9 [‡] 16	0.8 6	(7273.5)	1044.81	7 ⁺ , (6 ⁺)
5715.9 12	0.93 8	(7273.5)	1557.6		6236.8 13	0.86 11	(7273.5)	1036.83	(3,4,5 ⁺)
5728.3 12	0.98 10	(7273.5)	1545.2		6254.9 12	6.6 4	(7273.5)	1018.6	4 ⁻ , (4 ⁺ ,3 ⁻)
5742.0 25	0.14 9	(7273.5)	1531.5		6276.6 17	0.34 10	(7273.5)	996.7	
5747.8 14	0.61 10	(7273.5)	1525.7		6306.6 17	0.30 9	(7273.5)	969.32	4 ⁺ , (3 ⁺ ,4 ⁻ ,5)
5788.9 12	1.04 15	(7273.5)	1484.4		6437.8 12	2.75 22	(7273.5)	835.71	4 ⁻
5797.3 17	0.22 9	(7273.5)	1476.0		6545.6 [@] 16	0.50 13	(7273.5)	728.61	4 ⁺ , (5 ⁺)
5814.3 12	1.79 16	(7273.5)	1459.2		6577.3 12	2.25 20	(7273.5)	696.40	5 ⁻
5827.0 18	0.36 12	(7273.5)	1446.5		6698.3 [‡] 25	0.12 8	(7273.5)	574.42	(6) ⁻
5848.3 [@] 16	0.33 10	(7273.5)	1425.57		6776.6 12	0.96 13	(7273.5)	497.162	5 ⁺ , (4 ⁺)
5870.3 14	0.47 8	(7273.5)	1403.2		7052.1 13	0.46 10	(7273.5)	221.04	(4 ⁺)
5879.6 14	0.59 9	(7273.5)	1394.41	(4,5,6 ⁻)	7083.3 14	0.30 8	(7273.5)	190.290	5 ⁺
5924.6 13	0.63 9	(7273.5)	1348.99	(3,4,5)					

[†] Calibration for high energy γ 's is based on $E(\gamma)=7367.73 \pm 50$ for n-capture in Pb and $E(\gamma)=2223.29 \pm 7$ for n-capture in hydrogen calibration for low energy γ 's is based on known ^{116}In transitions, but quoted uncertainties for some γ 's are unrealistically low. The ^{116}In calibration lines are known at best to 0.02 keV; therefore, the evaluator has increased to 0.02 keV the authors' uncertainties that are smaller than this.

[‡] Existence of line is doubtful.

[#] Photons per 1000 neutron captures. The absolute intensity was obtained from the known ^{116}In γ rays and from the isomeric cross section. Only relative uncertainties are given. The authors estimate additional calibration uncertainty to be <20% for the high energy γ 's.

[@] Possibly a doublet.

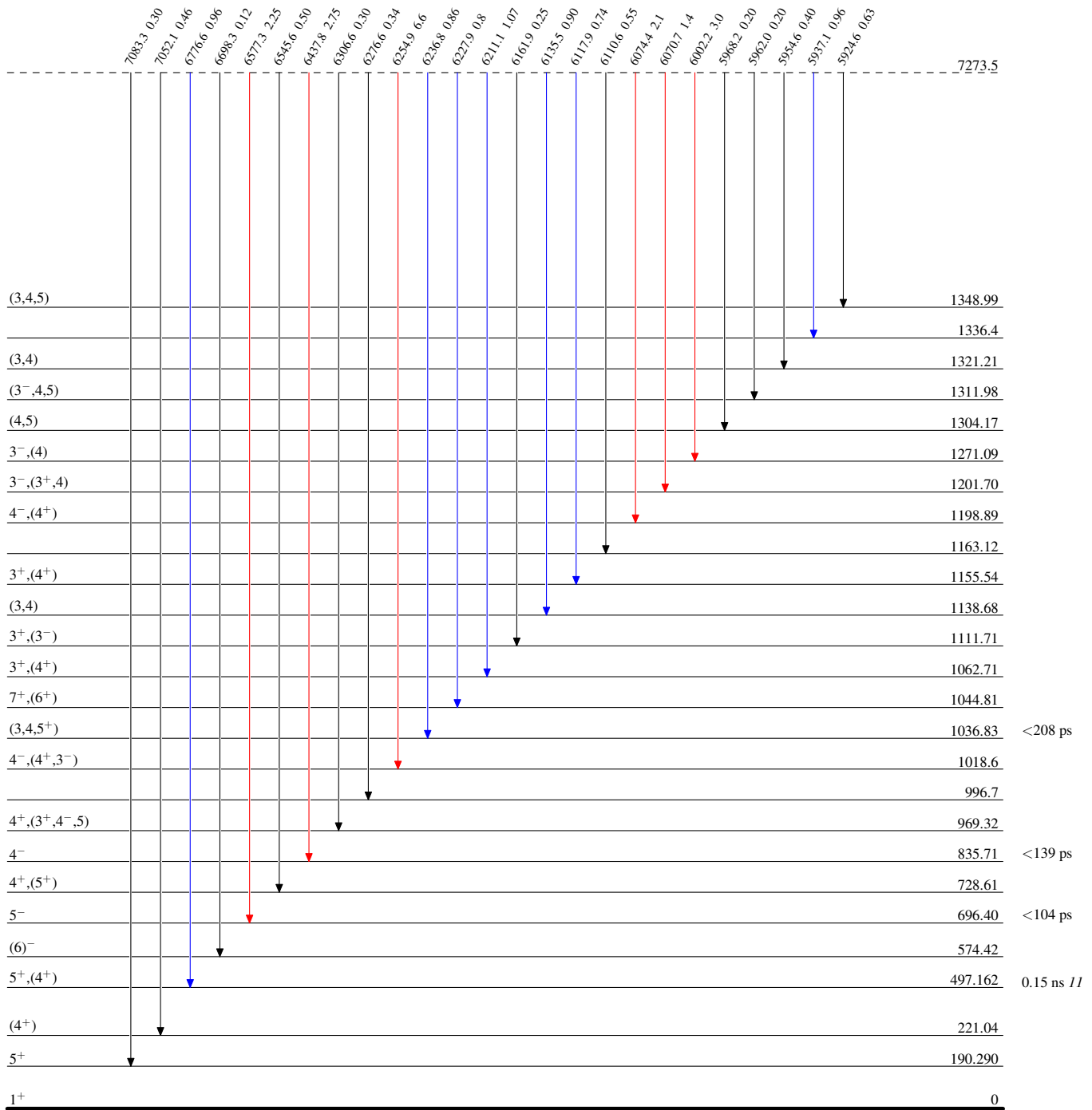
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Level Scheme

Intensities: Relative I_γ

Legend

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



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Level Scheme (continued)

Intensities: Relative I_γ

Legend

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

