

$^{104}\text{Ru}(n,\gamma)$ E=th:primary 1978Gu14

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. Lalkovski, J. Timar and Z. Elekes		NDS 161, 1 (2019)	1-Apr-2019

1978Gu14: Facility: DIDO reactor at Julich; Target: metallic Ru powder enriched to 96.39% in ^{104}Ru ; Beam: E(n)=thermal, flux= $1.3 \times 10^8 \text{ cm}^{-2}\text{s}^{-1}$; Detectors: two planar Ge, one rectangular Ge(Li), one NaI(Tl); Measured: γ , γ - γ coinc., γ - $\gamma(\theta)$ coinc., E_γ , I_γ ; Deduced: ^{105}Ru level scheme, γ -ray Mult., J^π ; Also, from the same collaboration: [1976SeZK](#), [1975GuZE](#), [1975GuZP](#), [1974Hr01](#).

Other: [1982Ba69](#), [1981BaZH](#), [1974Ba22](#).

 ^{105}Ru Levels

E(level) [†]	J^π [‡]	E(level) [†]	J^π [‡]	E(level) [†]	J^π [‡]	E(level) [†]	J^π [‡]
0.0	3/2 ⁺	490.83 4	(1/2,3/2) ⁻	966.3 8	(1/2 ⁺ ,3/2 ⁺)	1844.8 8	(1/2 ⁺ ,3/2 ⁺)
20.567? 13	5/2 ⁺	670.8 5	(1/2 ⁺ ,3/2 ⁺)	1325.6 3	(1/2,3/2)	2148.3 4	(3/2 ⁺)
159.2 3	1/2 ⁺	784.4 4	(1/2,3/2) ⁻	1329.9 11	(1/2 ⁺ ,3/2 ⁺)	2353.2 7	(1/2 ⁺ ,3/2 ⁺)
272.8 3	3/2 ⁺	805.55 15	1/2 ⁺	1693.4 7	(1/2 ⁺ ,3/2 ⁺)	2378.3 7	(1/2 ⁺ ,3/2 ⁺)
321.5 3	3/2 ⁻	823.9 3	3/2 ⁺	1735.2 4	(1/2 ⁺ ,3/2 ⁺)	2403.9 3	(1/2 ⁻ ,3/2)
465.9 3	3/2 ⁺	886.5 3	3/2 ⁺	1833.3 10	(1/2,3/2)	(5910.1 1)	1/2 ⁺

[†] From a least-square fit to E_γ .

[‡] From the Adopted Levels.

 $\gamma(^{105}\text{Ru})$

E_γ [†]	I_γ ^{†#}	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	Comments
3506.1 2	1.28 15	(5910.1)	1/2 ⁺	2403.9	(1/2 ⁻ ,3/2)		
3531.7 6	0.42 11	(5910.1)	1/2 ⁺	2378.3	(1/2 ⁺ ,3/2 ⁺)		
3556.8 6	0.23 8	(5910.1)	1/2 ⁺	2353.2	(1/2 ⁺ ,3/2 ⁺)		
3761.7 3	1.15 10	(5910.1)	1/2 ⁺	2148.3	(3/2 ⁺)		
4065.2 7	0.22 8	(5910.1)	1/2 ⁺	1844.8	(1/2 ⁺ ,3/2 ⁺)		
4076.7 9	0.31 7	(5910.1)	1/2 ⁺	1833.3	(1/2,3/2)		
4174.8 3	2.61 15	(5910.1)	1/2 ⁺	1735.2	(1/2 ⁺ ,3/2 ⁺)		
4216.6 6	1.46 20	(5910.1)	1/2 ⁺	1693.4	(1/2 ⁺ ,3/2 ⁺)		
4580.1 10	0.44 5	(5910.1)	1/2 ⁺	1329.9	(1/2 ⁺ ,3/2 ⁺)		
4584.4 2	1.70 12	(5910.1)	1/2 ⁺	1325.6	(1/2,3/2)		
4943.7 7	0.6 4	(5910.1)	1/2 ⁺	966.3	(1/2 ⁺ ,3/2 ⁺)		
5023.4 2	12.5 24	(5910.1)	1/2 ⁺	886.5	3/2 ⁺	D	Mult.: $A_{22}=-0.072\ 30$ and $A_{44}=-0.025\ 47$ (1978Gu14) or $A_{22}=-0.081\ 27$ and $A_{44}=0$ (1978Gu14).
5086.0 2	0.31 10	(5910.1)	1/2 ⁺	823.9	3/2 ⁺		
5107.9 ^{‡@} 20	1.1 3	(5910.1)	1/2 ⁺	805.55	1/2 ⁺		
5125.5 3	3.37 20	(5910.1)	1/2 ⁺	784.4	(1/2,3/2) ⁻		
5239.1 4	0.20 10	(5910.1)	1/2 ⁺	670.8	(1/2 ⁺ ,3/2 ⁺)		
5415 ^{‡@} 4	2.88 13	(5910.1)	1/2 ⁺	490.83	(1/2,3/2) ⁻		
5444.0 2	1.57 15	(5910.1)	1/2 ⁺	465.9	3/2 ⁺		
5588.4 2	3.80 25	(5910.1)	1/2 ⁺	321.5	3/2 ⁻		
5637.1 2	0.8 2	(5910.1)	1/2 ⁺	272.8	3/2 ⁺		
5750.7 2	1.6 4	(5910.1)	1/2 ⁺	159.2	1/2 ⁺		
5889 ^{‡@} 5		(5910.1)	1/2 ⁺	20.567?	5/2 ⁺		
5909.9 2	3.6 3	(5910.1)	1/2 ⁺	0.0	3/2 ⁺		

[†] From [1978Gu14](#), unless otherwise noted.

Continued on next page (footnotes at end of table)

$^{104}\text{Ru}(\text{n},\gamma)$ E=th:primary **1978Gu14** (continued)

$\gamma(^{105}\text{Ru})$ (continued)

‡ Observed only by [1974Ba22](#).

Intensity per 100 neutron captures.

@ Placement of transition in the level scheme is uncertain.

