

$^{238}\text{U}(\alpha, \text{F}\gamma)$ [2006Wu01,2003Hu05](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. Lalkovski, F. G. Kondev		NDS 124, 157 (2015)	1-Aug-2014

[2003Hu05,2006Wu01](#): Facility: 88-inch cyclotron at LBNL; Beam: $E(\alpha)=30$ MeV; Target: $300 \mu\text{g}/\text{cm}^2$ ^{238}U on a $30 \mu\text{g}/\text{cm}^2$ carbon backing; Detectors: CHICO and GAMMASPHERE; Measured: particle- γ - γ coin; Deduced: level scheme.

 ^{112}Ru Levels

E(level) [†]	J π [@]	Comments
0 [‡]	0 ⁺	
236.6 [‡] 5	2 ⁺	
523.7 [#] 5	2 ⁺	
645.0 [‡] 6	4 ⁺	
747.6 [#] 8	3 ⁺	
980.6 [#] 7	4 ⁺	
1189.9 [‡] 8	6 ⁺	
1235.6 [#] 13	5 ⁺	
1570.6 [#] 12	6 ⁺	
1839.4 [‡] 10	8 ⁺	
1840.6 [#] 16	7 ⁺	
2263.6 [#] 16	8 ⁺	
2534.6 [#] 19	9 ⁺	
2562.7 [‡] 11	10 ⁺	
3032.6 [#] 19	10 ⁺	
3290.6 [#] 22	11 ⁺	
3325.8 [‡] 12	12 ⁺	
3868.6 [#] 21	12 ⁺	
4095.6 [#] 24	13 ⁺	
4117.7 [‡] 13	14 ⁺	
4786.7 [#] 24	14 ⁺	E(level): 4749.1 keV in 2006Wu01 probably is missprint. Does not fit with 918 γ to 3869-keV level.
4953 [#] 3	15 ⁺	
4953.8 [‡] 14	16 ⁺	
5827.0 [‡] 15	18 ⁺	
5857 [#] 3	17 ⁺	
6722.6 [‡] 16	20 ⁺	
6800 [#] 3	19 ⁺	
7746.5 [‡] 17	22 ⁺	

[†] From a least-squares fit to $E\gamma$.

[‡] $K^\pi=0^+$, g.s. band.

[#] $K^\pi=2^+$, γ -vibrational band.

[@] From [2006Wu01](#), based on the observed band structures.

$^{238}\text{U}(\alpha, \text{F}\gamma)$ **2006Wu01,2003Hu05 (continued)** $\gamma(^{112}\text{Ru})$

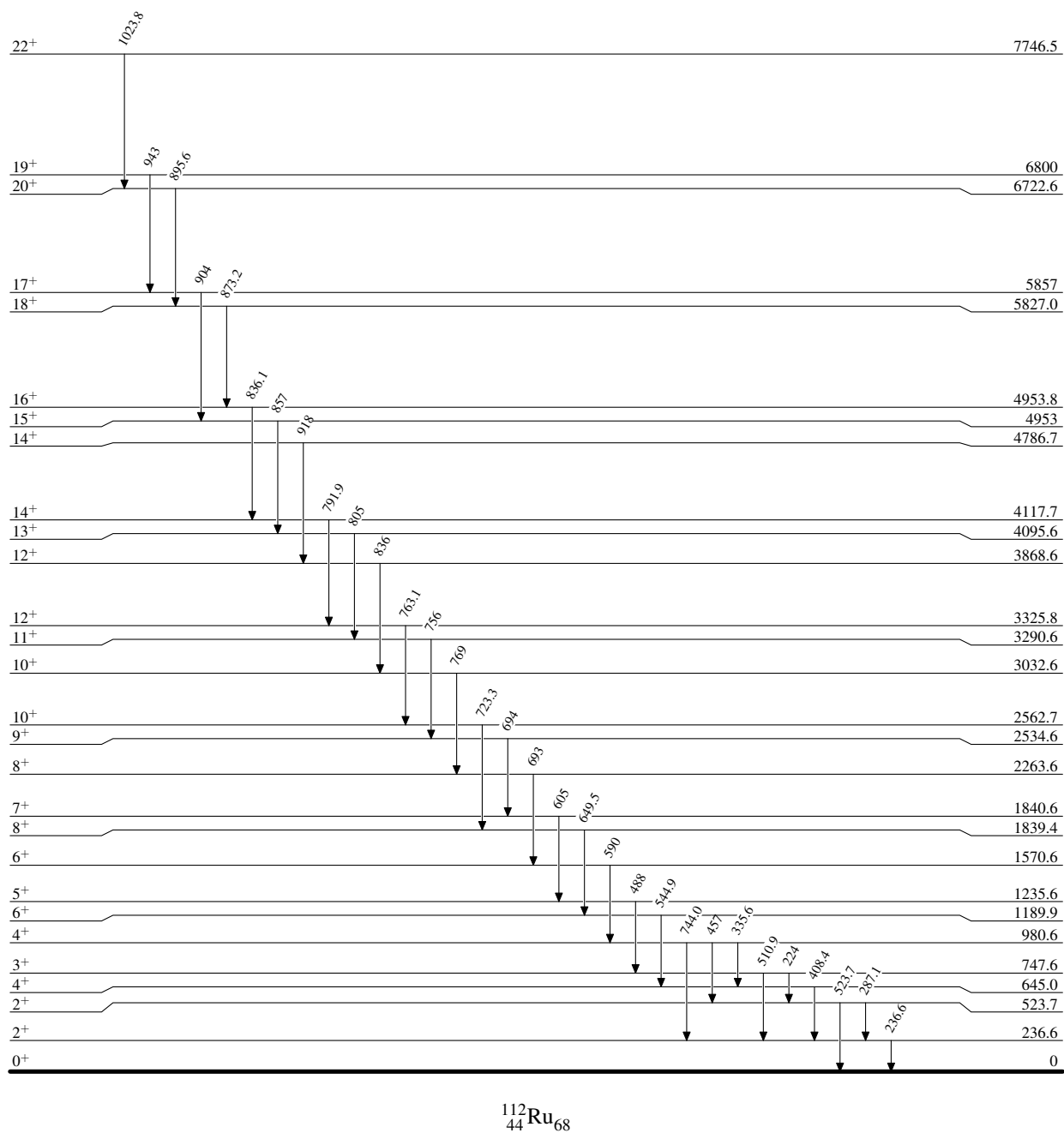
$E_\gamma^\dagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
224 <i>I</i>	747.6	3 ⁺	523.7	2 ⁺	
236.6 $\ddagger$ 5	236.6	2 ⁺	0	0 ⁺	
287.1 7	523.7	2 ⁺	236.6	2 ⁺	E_γ : Deduced by the evaluators from the level-energy differences in Fig.7 (2006Wu01).
335.6 8	980.6	4 ⁺	645.0	4 ⁺	E_γ : Deduced by the evaluators from the level-energy differences in Fig.7 (2006Wu01).
408.4 $\ddagger$ 5	645.0	4 ⁺	236.6	2 ⁺	
457 <i>I</i>	980.6	4 ⁺	523.7	2 ⁺	
488 <i>I</i>	1235.6	5 ⁺	747.6	3 ⁺	
510.9 8	747.6	3 ⁺	236.6	2 ⁺	E_γ : Deduced by the evaluators from the level-energy differences in Fig.7 (2006Wu01).
523.7 5	523.7	2 ⁺	0	0 ⁺	E_γ : Deduced by the evaluators from the level-energy differences in Fig.7 (2006Wu01).
544.9 $\ddagger$ 5	1189.9	6 ⁺	645.0	4 ⁺	
590 <i>I</i>	1570.6	6 ⁺	980.6	4 ⁺	
605 <i>I</i>	1840.6	7 ⁺	1235.6	5 ⁺	
649.5 $\ddagger$ 5	1839.4	8 ⁺	1189.9	6 ⁺	
693 <i>I</i>	2263.6	8 ⁺	1570.6	6 ⁺	
694 <i>I</i>	2534.6	9 ⁺	1840.6	7 ⁺	
723.3 $\ddagger$ 5	2562.7	10 ⁺	1839.4	8 ⁺	
744.0 8	980.6	4 ⁺	236.6	2 ⁺	E_γ : Deduced by the evaluators from the level-energy differences in Fig.7 (2006Wu01).
756 <i>I</i>	3290.6	11 ⁺	2534.6	9 ⁺	
763.1 $\ddagger$ 5	3325.8	12 ⁺	2562.7	10 ⁺	
769 <i>I</i>	3032.6	10 ⁺	2263.6	8 ⁺	
791.9 $\ddagger$ 5	4117.7	14 ⁺	3325.8	12 ⁺	
805 <i>I</i>	4095.6	13 ⁺	3290.6	11 ⁺	
836 <i>I</i>	3868.6	12 ⁺	3032.6	10 ⁺	
836.1 $\ddagger$ 5	4953.8	16 ⁺	4117.7	14 ⁺	
857 <i>I</i>	4953	15 ⁺	4095.6	13 ⁺	
873.2 $\ddagger$ 5	5827.0	18 ⁺	4953.8	16 ⁺	E_γ : 875 keV in 2006Wu01.
895.6 $\ddagger$ 5	6722.6	20 ⁺	5827.0	18 ⁺	
904 <i>I</i>	5857	17 ⁺	4953	15 ⁺	
918 <i>I</i>	4786.7	14 ⁺	3868.6	12 ⁺	
943 <i>I</i>	6800	19 ⁺	5857	17 ⁺	
1023.8 $\ddagger$ 5	7746.5	22 ⁺	6722.6	20 ⁺	E_γ : 1026 keV in 2006Wu01.

† From 2006Wu01, unless otherwise stated. ΔE_γ were estimated by the evaluators.

‡ From 2003Hu05.

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Level Scheme

 $^{112}_{44}\text{Ru}_{68}$