$^{238}U(^{12}C,x\gamma)$ 2002Lu15

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. Ohya	NDS 111, 1619 (2010)	20-Jan-2009

Includes $^{208}Pb(^{18}O,x\gamma)$ and $^{176}Yb(^{31}P,x\gamma)$ reactions.
$^{238}U(^{12}C,x\gamma)$ E= 90 MeV; $^{208}Pb(^{18}O,x\gamma)$ E= 85 MeV; $^{176}Yb(^{31}P,x\gamma)$ E=152 MeV. Measured Eγ, Iγ, $\gamma\gamma$, γ(t) using EUROBALL III array of 15 cluster Ge detectors, 26 clover Ge detectors, and 30 tapered single-crystal Ge detectors.

^{121}In Levels

E(level)†	J$^\pi$‡	$T_{1/2}$	Comments
0.0#	$9/2^+$		
988.0& *10*	$(9/2)^+$		J$^\pi$: Authors assign as $(7/2^+)$ from systematics of In isotopes.
1021.0 *9*	$(9/2,11/2,13/2)^+$		J$^\pi$: Authors assign as $11/2^+$ from systematics of In isotopes.
1181.0# *9*	$(13/2)^+$		J$^\pi$: Authors assign as $13/2^+$ from systematics of In isotopes.
1408.0& *15*	$(9/2^+)$		J$^\pi$: Authors assign as $(11/2^+)$ from systematics of In isotopes.
2048.0& *18*	$(11/2^+,13/2^+)$		J$^\pi$: Authors assign as $(15/2^+)$ from systematics of In isotopes.
2134.0@ *13*			J$^\pi$: Authors assign as $(15/2^-)$ from systematics of In isotopes.
2134.0+x@	$(17/2^-)$		Additional information 1.
2134.0+y@	$(19/2^-)$		Additional information 2.
2303.0+y@ *10*	$(21/2^-)$		
2348.0+y# *10*	$(21/2^+)$		
2447.0+y# *15*	$(25/2^+)$	350 ns *50*	$T_{1/2}$: γ(t) from fragments.
2664.0+y@ *15*	$(23/2^-)$		
2774.0+y@ *18*	$(25/2^-)$		
2802.0+y *15*			
3347.0+y@ *20*	$(27/2^-)$		
3890.0+y@ *20*	$(29/2^-)$		

† From least-squares fit to Eγ's, assuming Δ(Eγ)= 1 keV for each γ ray.
‡ From Adopted Levels. Authors' J^π values at 988, 1021, 1181, 1408 and 2048 keV levels are different from those in Adopted Levels.
# Band(A): $\pi g_{9/2}^{-1}\nu h_{11/2}^2$.
@ Band(B): Three-particle configuration. Configuration= $\pi g_{9/2}^{-1}\nu h_{11/2}^1(\nu(d_{5/2}$ and/or $g_{7/2})^1)$.
& Band(C): π1/2[431]. Intruder orbital from $\pi(g_{7/2}$ and/or $d_{5/2})$.

$\gamma(^{121}In)$

Eγ	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
x†	2134.0+x	$(17/2^-)$	2134.0		Eγ: x <60.
y†	2134.0+y	$(19/2^-)$	2134.0+x	$(17/2^-)$	Eγ: y <60.
99‡	2447.0+y	$(25/2^+)$	2348.0+y	$(21/2^+)$	
110‡	2774.0+y	$(25/2^-)$	2664.0+y	$(23/2^-)$	
160	1181.0	$(13/2)^+$	1021.0	$(9/2,11/2,13/2)^+$	
169†	2303.0+y	$(21/2^-)$	2134.0+y	$(19/2^-)$	
214†	2348.0+y	$(21/2^+)$	2134.0+y	$(19/2^-)$	
361†	2664.0+y	$(23/2^-)$	2303.0+y	$(21/2^-)$	
420	1408.0	$(9/2^+)$	988.0	$(9/2)^+$	
454	2802.0+y		2348.0+y	$(21/2^+)$	

Continued on next page (footnotes at end of table)

^{238}U(^{12}C,xγ) 2002Lu15 (continued)

γ(^{121}In) (continued)

E_γ	E_i(level)	J_i^π	E_f	J_f^π	E_γ	E_i(level)	J_i^π	E_f	J_f^π
543‡	3890.0+y	(29/2$^-$)	3347.0+y	(27/2$^-$)	988‡	988.0	(9/2)$^+$	0.0	9/2$^+$
573‡	3347.0+y	(27/2$^-$)	2774.0+y	(25/2$^-$)	1021	1021.0	(9/2,11/2,13/2)$^+$	0.0	9/2$^+$
640	2048.0	(11/2$^+$,13/2$^+$)	1408.0	(9/2$^+$)	1116	3890.0+y	(29/2$^-$)	2774.0+y	(25/2$^-$)
953†	2134.0		1181.0	(13/2)$^+$	1181†	1181.0	(13/2)$^+$	0.0	9/2$^+$

† Strong transition.
‡ Medium-intensity transition.

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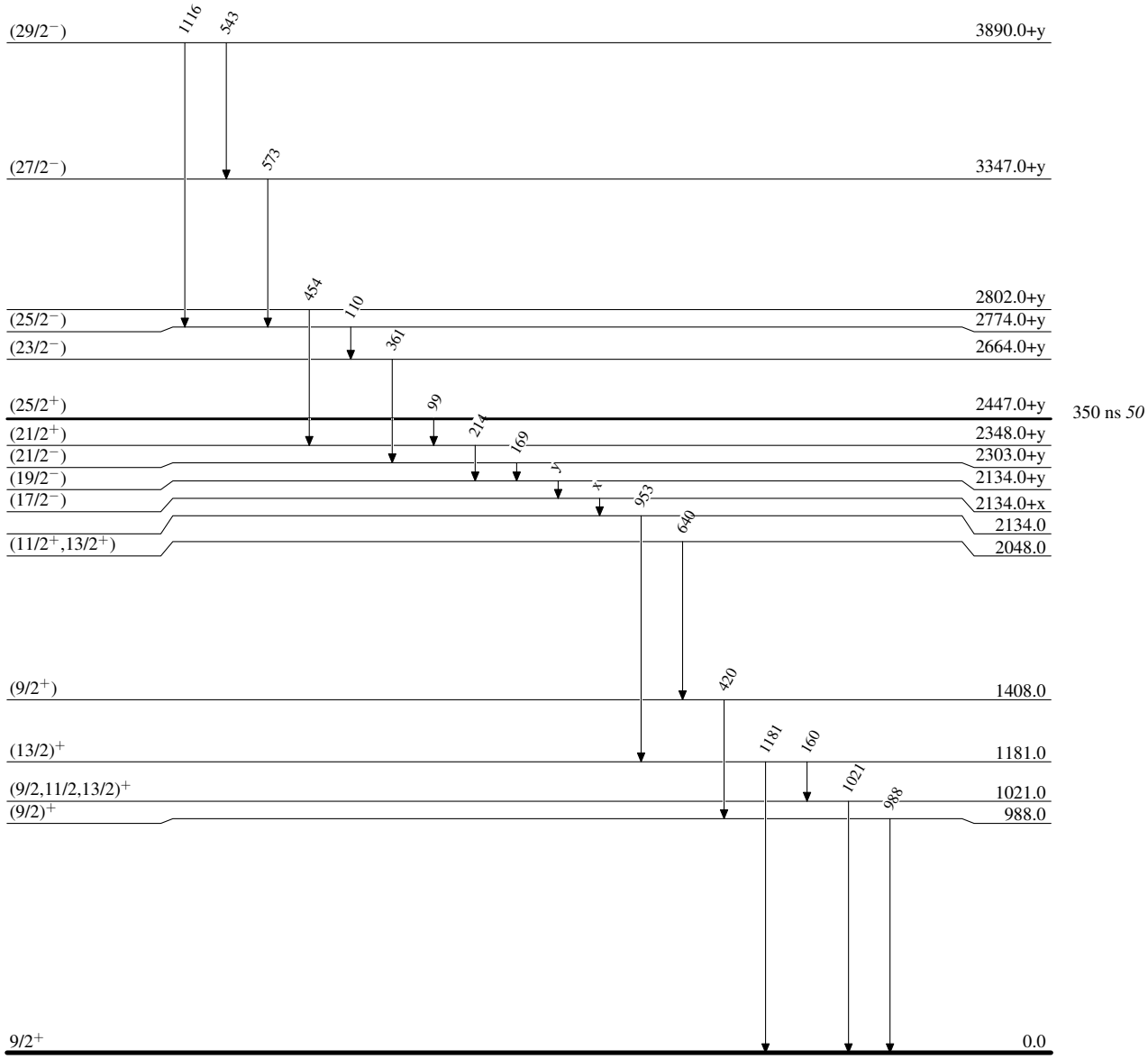
Level Scheme



$^{121}_{49}In_{72}$

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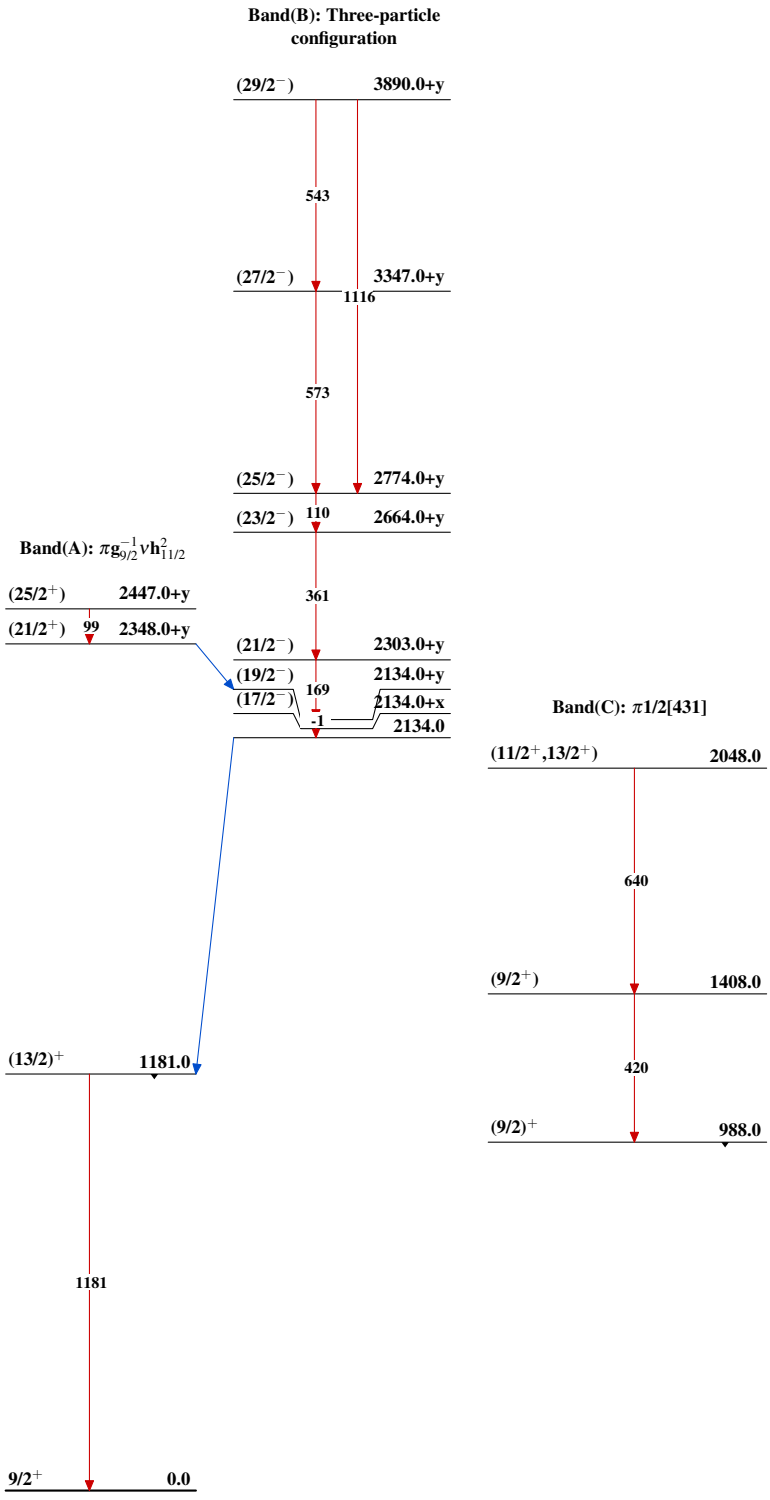

$^{121}_{49}In_{72}$