

$^{197}\text{Au}(^{12}\text{C},3\text{n}\gamma)$ 1999Fe10

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 109, 1527 (2008)	31-Jan-2008

$E(^{12}\text{C})=60\text{--}80\text{ MeV}$; Target: ^{197}Au , 1 mg/cm² thick; Detectors: 7 HPGe with BGO shields and 1 planar Ge (LEPS) detector;
 Measured: $E\gamma$, $\gamma\gamma$ and $X\gamma$ coin ($E(^{12}\text{C})=63\text{ MeV}$), excitation functions, $\gamma\gamma(t)$, $\gamma(\theta)$. The assignment of γ -rays to ^{206}At is based on the excitation function data and coincidences of the main γ -rays with the At $K\alpha$ x ray. No $\gamma(\theta)$ results were presented in 1999Fe10.

 ^{206}At Levels

$E(\text{level})^{\dagger}$	$J^{\pi\ddagger}$	$T_{1/2}$	Comments
0+x	(7 ⁺)		Additional information 1. Configuration= $((\pi\text{ h}_{9/2})^{+1}(\nu\text{ f}_{5/2})^{-1})$. The assignment is tentative.
686.0+x 10	(9 ⁺)		
806.7+x 14	(10 ⁻)	410 ns 80	$T_{1/2}$: From $\gamma\gamma(t)$ data by gating on gamma-rays above and below the isomer. It should be noted, however, that the coincidence window reported by the authors is +/- 300 ns, and hence, the reported $T_{1/2}$ is somewhat outside this limit. Configuration= $((\pi\text{ h}_{9/2})^{+1}(\nu\text{ i}_{13/2})^{-1})$. The assignment is tentative.
1276.3+x 14	(11 ⁺)		
1347.7+x 17			
1393.3+x 17			
1422.4+x 16	(12 ⁻)		
1622.5+x 15			
1740.7+x 20			
1797.4+x 19	(13 ⁻)		
1814.3+x 17	(14 ⁻)		
1961.8+x 17			
2002.3+x 17	(14 ⁻)		
2010.4+x 16			
2103.3+x 19			
2133.3+x 20			
2251.1+x 17			
2291.3+x 19			
2552.1+x 20			
2645.3+x 20			
2796.3+x 19			
2902.3+x 22			

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

[‡] From systematics in neighboring odd-odd nuclei and the suggestions in 1999Fe10.

 $\gamma(^{206}\text{At})$

$E_{\gamma}^{\dagger}$	$E_i(\text{level})$	J_i^{π}	E_f	J_f^{π}	Mult. [‡]	$E_{\gamma}^{\dagger}$	$E_i(\text{level})$	J_i^{π}	E_f	J_f^{π}	Mult. [‡]
117 I	1393.3+x		1276.3+x	(11 ⁺)		339 I	1961.8+x		1622.5+x		
121 I	806.7+x	(10 ⁻)	686.0+x	(9 ⁺)	[E1]	346 I	1622.5+x		1276.3+x	(11 ⁺)	
188 I	2002.3+x	(14 ⁻)	1814.3+x	(14 ⁻)		375 I	1797.4+x	(13 ⁻)	1422.4+x	(12 ⁻)	[M1]
249 I	2251.1+x		2002.3+x	(14 ⁻)		388 I	2010.4+x		1622.5+x		
257 I	2902.3+x		2645.3+x			392 I	1814.3+x	(14 ⁻)	1422.4+x	(12 ⁻)	[E2]
289 I	2103.3+x		1814.3+x	(14 ⁻)		393 I	1740.7+x		1347.7+x		
289 I	2251.1+x		1961.8+x			437 I	2251.1+x		1814.3+x	(14 ⁻)	
289 I	2291.3+x		2002.3+x	(14 ⁻)		505 I	2796.3+x		2291.3+x		
301 I	2552.1+x		2251.1+x			541 I	1347.7+x		806.7+x	(10 ⁻)	
319 I	2133.3+x		1814.3+x	(14 ⁻)		580 I	2002.3+x	(14 ⁻)	1422.4+x	(12 ⁻)	[E2]

Continued on next page (footnotes at end of table)

$^{197}\text{Au}(^{12}\text{C},3\text{n}\gamma)$ **1999Fe10** (continued) $\gamma(^{206}\text{At})$ (continued)

<u>E_γ [†]</u>	<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult. [‡]</u>
590 <i>I</i>	1276.3+x	(11 ⁺)	686.0+x	(9 ⁺)	[E2]
616 <i>I</i>	1422.4+x	(12 ⁻)	806.7+x	(10 ⁻)	[E2]
686 <i>I</i>	686.0+x	(9 ⁺)	0+x	(7 ⁺)	[E2]
693 <i>I</i>	2796.3+x		2103.3+x		
734 <i>I</i>	2010.4+x		1276.3+x	(11 ⁺)	
831 <i>I</i>	2645.3+x		1814.3+x	(14 ⁻)	

[†] From **1999Fe10**. The uncertainties were assigned by the evaluator.

[‡] From **1999Fe10** level scheme, but no arguments were provided by the authors.

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Level Scheme

