

$^{48}\text{Ti}(^{136}\text{Xe},4n\gamma)$  1985Pe07

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 126, 151 (2015)	1-Feb-2015

$E(^{136}\text{Xe})=622$  MeV. Measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ ,  $\gamma\gamma(t)$  of delayed transitions using the recoil shadow technique with a  $^{208}\text{Pb}$  catcher foil and an array of two Ge(Li) detectors and ten NaI detectors. Delayed transitions were investigated in the 110 ns time window between the 1 ns beam bursts.

[Additional information 1.](#)

 $^{180}\text{Os}$  Levels

$\gamma\gamma(t)$  data showed the existence of two isomeric states feeding the observed levels, one with  $T_{1/2}\approx 130$  ns and  $J\geq 18$  which feeds the states with  $J=10-18$  and another with  $T_{1/2}\approx 20$  ns and  $J\geq 8$  which feeds lower-spin states.

<u>E(level)<sup>†</sup></u>	<u><math>J^{\pi\ddagger}</math></u>	<u>E(level)<sup>†</sup></u>	<u><math>J^{\pi\ddagger}</math></u>	<u>E(level)<sup>†</sup></u>	<u><math>J^{\pi\ddagger}</math></u>	<u>E(level)<sup>†</sup></u>	<u><math>J^{\pi\ddagger}</math></u>
0.0 <sup>#</sup>	0 <sup>+</sup>	1259.4 <sup>#</sup>	8 <sup>+</sup>	2311.7 <sup>#</sup>	12 <sup>+</sup>	3477	15 <sup>-</sup>
132.9 <sup>#</sup>	2 <sup>+</sup>	1770.2 <sup>#</sup>	10 <sup>+</sup>	2547	11 <sup>-</sup>	3499 <sup>#</sup>	16 <sup>+</sup>
409.9 <sup>#</sup>	4 <sup>+</sup>	1864.6	7 <sup>-</sup>	2879 <sup>#</sup>	14 <sup>+</sup>	4139 <sup>#</sup>	18 <sup>+</sup>
796.6 <sup>#</sup>	6 <sup>+</sup>	2178.1	9 <sup>-</sup>	2983	13 <sup>-</sup>		

<sup>†</sup> From a least-squares fit to  $E\gamma$  by evaluator.

<sup>‡</sup> From the Adopted Levels.

<sup>#</sup> g.s. band.

 $\gamma(^{180}\text{Os})$ 

All  $\gamma$ 's presented in 1985Pe07 are ascribed to the  $T_{1/2}\approx 130$  ns isomer decay. In addition, the  $\gamma$ 's originating from below the 8<sup>+</sup> level of the g.s. band were found to have a  $T_{1/2}\approx 20$  ns component.

<u><math>E_\gamma</math></u>	<u><math>I_\gamma</math></u>	<u><math>E_i(\text{level})</math></u>	<u><math>J_i^\pi</math></u>	<u><math>E_f</math></u>	<u><math>J_f^\pi</math></u>	<u><math>E_\gamma</math></u>	<u><math>I_\gamma</math></u>	<u><math>E_i(\text{level})</math></u>	<u><math>J_i^\pi</math></u>	<u><math>E_f</math></u>	<u><math>J_f^\pi</math></u>
132.9	49 10	132.9	2 <sup>+</sup>	0.0	0 <sup>+</sup>	605.2	8 2	1864.6	7 <sup>-</sup>	1259.4	8 <sup>+</sup>
277.0	105 5	409.9	4 <sup>+</sup>	132.9	2 <sup>+</sup>	620.5	16 2	3499	16 <sup>+</sup>	2879	14 <sup>+</sup>
<sup>x</sup> 287.0	14 2					639.4	10 2	4139	18 <sup>+</sup>	3499	16 <sup>+</sup>
313.5	11 2	2178.1	9 <sup>-</sup>	1864.6	7 <sup>-</sup>	<sup>x</sup> 645.9	6 2				
368.9	9 2	2547	11 <sup>-</sup>	2178.1	9 <sup>-</sup>	671.8	7 2	2983	13 <sup>-</sup>	2311.7	12 <sup>+</sup>
386.7	95 5	796.6	6 <sup>+</sup>	409.9	4 <sup>+</sup>	<sup>x</sup> 699.1	9 2				
462.8	80 5	1259.4	8 <sup>+</sup>	796.6	6 <sup>+</sup>	<sup>x</sup> 832.5	7 2				
493.7	12 2	3477	15 <sup>-</sup>	2983	13 <sup>-</sup>	<sup>x</sup> 891.9	7 2				
510.8	72 4	1770.2	10 <sup>+</sup>	1259.4	8 <sup>+</sup>	<sup>x</sup> 902.7	8 2				
541.5	48 3	2311.7	12 <sup>+</sup>	1770.2	10 <sup>+</sup>	<sup>x</sup> 969.4	6 2				
566.8	33 3	2879	14 <sup>+</sup>	2311.7	12 <sup>+</sup>	<sup>x</sup> 997.7	4 1				
<sup>x</sup> 577.4	12 2					<sup>x</sup> 1426.8	6 2				
598.2	8 2	3477	15 <sup>-</sup>	2879	14 <sup>+</sup>						

<sup>x</sup>  $\gamma$  ray not placed in level scheme.

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Legend

## Level Scheme

Intensities: Type not specified

- $\blacktriangleright$   $I_\gamma < 2\% \times I_\gamma^{\max}$
- $\color{blue}\blacktriangleright$   $I_\gamma < 10\% \times I_\gamma^{\max}$
- $\color{red}\blacktriangleright$   $I_\gamma > 10\% \times I_\gamma^{\max}$

