

<sup>144</sup>Sm(<sup>35</sup>Cl,p3n $\gamma$ ) 1990Ce05

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 102, 719 (2004)	1-Jun-2004

<sup>58</sup>Ni on <sup>121</sup>Sb, <sup>60</sup>Ni on <sup>118</sup>Sn.

Target: <sup>144</sup>Sm. Reaction: <sup>144</sup>Sm(<sup>35</sup>Cl,p3n $\gamma$ ), E=175-185 MeV. Measured E $\gamma$ , I $\gamma$ ,  $\gamma$ -ray excitation functions,  $\gamma\gamma$  coin,  $\gamma$ -xray coin. Detector: ESSA30 spectrometer, consisting of an array of 30 Compton-suppressed germanium detectors. Other reactions used: <sup>58</sup>Ni on <sup>121</sup>Sb, <sup>60</sup>Ni on <sup>118</sup>Sn. E=270 MeV. Measured  $\gamma\gamma$  coin,  $\gamma$ -recoil (mass) coin,  $\gamma\gamma$  recoil (mass) coin. Detector: An array of 20 Compton-suppressed germanium detectors with a recoil-mass separator.

<sup>175</sup>Pt Levels

E(level) <sup>†‡</sup>	J $\pi$ <sup>#</sup>	Comments
0.0	(7/2 <sup>-</sup> )	E(level),J $\pi$ : From Adopted Levels.
0.0+x	(13/2 <sup>+</sup> )	
138.4+x	(11/2 <sup>+</sup> )	
328.1+x	(17/2 <sup>+</sup> )	
381.6+x	(15/2 <sup>+</sup> )	
744.0+x	(19/2 <sup>+</sup> )	
764.7+x	(21/2 <sup>+</sup> )	
1171.8+x	(23/2 <sup>+</sup> )	
1231.3+x	(25/2 <sup>+</sup> )	
1662.8+x	(27/2 <sup>+</sup> )	
1738.3+x	(29/2 <sup>+</sup> )	
2211.5+x	(31/2 <sup>+</sup> )	
2293.5+x	(33/2 <sup>+</sup> )	
2816.9+x	(35/2 <sup>+</sup> )	
2897.1+x	(37/2 <sup>+</sup> )	
3474.9+x	(39/2 <sup>+</sup> )	
3544.0+x	(41/2 <sup>+</sup> )	
4231.0+x	(45/2 <sup>+</sup> )	

<sup>†</sup> Deduced by evaluator from a least-squares fit to  $\gamma$ -ray energies.

<sup>‡</sup> Members of i<sub>13/2</sub> Coriolis-mixed rotational band.

<sup>#</sup> Spin and parity assignments are based on rotational and energy systematics of the i<sub>13/2</sub> Coriolis-mixed band in other N=97 nuclei.

$\gamma$ (<sup>175</sup>Pt)

E $\gamma$ <sup>†</sup>	I $\gamma$ <sup>‡</sup>	E <sub>i</sub> (level)	J $\pi$ <sub>i</sub>	E <sub>f</sub>	J $\pi$ <sub>f</sub>	Comments
243.2	49 9	381.6+x	(15/2 <sup>+</sup> )	138.4+x	(11/2 <sup>+</sup> )	
327.8		328.1+x	(17/2 <sup>+</sup> )	0.0+x	(13/2 <sup>+</sup> )	
362.6		744.0+x	(19/2 <sup>+</sup> )	381.6+x	(15/2 <sup>+</sup> )	
381.9		381.6+x	(15/2 <sup>+</sup> )	0.0+x	(13/2 <sup>+</sup> )	I $\gamma$ : 89 18 relative to the I $\gamma$ of 427.8 keV transition.
407.1	9 2	1171.8+x	(23/2 <sup>+</sup> )	764.7+x	(21/2 <sup>+</sup> )	
415.7	14 2	744.0+x	(19/2 <sup>+</sup> )	328.1+x	(17/2 <sup>+</sup> )	
427.8		1171.8+x	(23/2 <sup>+</sup> )	744.0+x	(19/2 <sup>+</sup> )	I $\gamma$ : 100 relative to the I $\gamma$ of 427.8 keV transition.
436.6	100	764.7+x	(21/2 <sup>+</sup> )	328.1+x	(17/2 <sup>+</sup> )	
466.6	63 8	1231.3+x	(25/2 <sup>+</sup> )	764.7+x	(21/2 <sup>+</sup> )	
491.0		1662.8+x	(27/2 <sup>+</sup> )	1171.8+x	(23/2 <sup>+</sup> )	I $\gamma$ : 60 14 relative to the I $\gamma$ of 427.8 keV transition.
507.0	45 6	1738.3+x	(29/2 <sup>+</sup> )	1231.3+x	(25/2 <sup>+</sup> )	
548.7		2211.5+x	(31/2 <sup>+</sup> )	1662.8+x	(27/2 <sup>+</sup> )	I $\gamma$ : 39 11 relative to the I $\gamma$ of 427.8 keV transition.
555.2	28 4	2293.5+x	(33/2 <sup>+</sup> )	1738.3+x	(29/2 <sup>+</sup> )	
603.6	19 3	2897.1+x	(37/2 <sup>+</sup> )	2293.5+x	(33/2 <sup>+</sup> )	
605.4		2816.9+x	(35/2 <sup>+</sup> )	2211.5+x	(31/2 <sup>+</sup> )	I $\gamma$ : 35 11 relative to the I $\gamma$ of 427.8 keV transition.

Continued on next page (footnotes at end of table)

$^{144}\text{Sm}(^{35}\text{Cl,p3n}\gamma)$  1990Ce05 (continued) $\gamma(^{175}\text{Pt})$  (continued)

$E_\gamma$ †	$I_\gamma$ ‡	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Comments
647	8 2	3544.0+x	(41/2 <sup>+</sup> )	2897.1+x	(37/2 <sup>+</sup> )	
658		3474.9+x	(39/2 <sup>+</sup> )	2816.9+x	(35/2 <sup>+</sup> )	$I_\gamma$ : 20 10 relative to the $I_\gamma$ of 427.8 keV transition.
687	5 3	4231.0+x	(45/2 <sup>+</sup> )	3544.0+x	(41/2 <sup>+</sup> )	

† The  $\gamma$ -ray energies are accurate within 0.3 keV for the strong transitions and 0.9 keV for the weakest transitions.

‡ Relative to  $I_\gamma=100$  for the 436.6 keV transition.

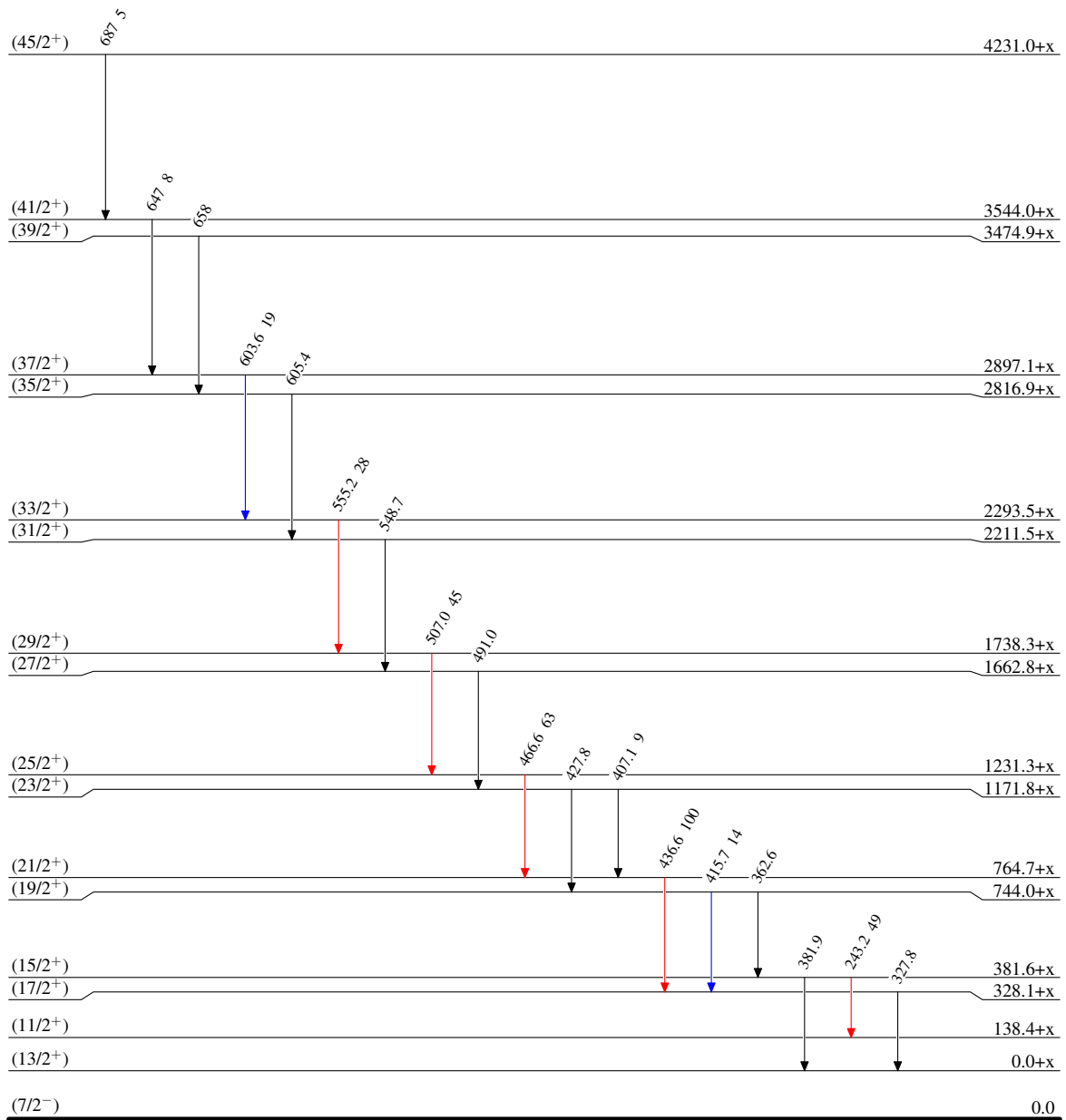
$^{144}\text{Sm}(^{35}\text{Cl},\text{p}3\text{n}\gamma)$  1990Ce05

## Level Scheme

Intensities: Type not specified

## Legend

- $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- $I_\gamma > 10\% \times I_\gamma^{\text{max}}$

 $^{175}_{78}\text{Pt}_{97}$