

<sup>192</sup>Os(<sup>7</sup>Li,<sup>6</sup>Liγ) 2014Ga14

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 143, 1 (2017)	31-Mar-2017

<sup>193</sup>Os produced via the one neutron transfer <sup>192</sup>Os(<sup>7</sup>Li,<sup>6</sup>Li) reaction with a E(<sup>7</sup>Li)=44 MeV beam provided by the HI-13 Tandem Accelerator at the China Institute of Atomic Energy (CIAE). Target consisted of a 1.7 mg/cm<sup>2</sup> isotopically enriched <sup>192</sup>Os metallic foil on a 1.1 mg/cm<sup>2</sup> carbon backing. Measured Eγ, Iγ, γγ, γγ(t) and x-ray-γ(t) coincidences using 14 Compton-suppressed HPGe detectors. Coincidence spectra were analyzed with two time ranges: prompt coincidences defined as t < 50 ns and delayed coincidences defined as 150 ns < t < 400 ns.

Includes data from the <sup>192</sup>Os(<sup>82</sup>Se,<sup>81</sup>Se) reaction with E(<sup>82</sup>Se)=460 MeV carried out at the Laboratori Nazionali di Legnaro, Italy; used as a cross check of the <sup>192</sup>Os(<sup>7</sup>Li,<sup>6</sup>Li) results. Measured Eγ, Iγ, γγ, γγ(θ) using the GASP array consisting of 40 Compton-suppressed HPGe detectors and an inner BGO ball. Assignment of new gamma rays to <sup>193</sup>Os was supported by cross coincidences with the 191-keV transition in the partner nucleus <sup>81</sup>Se.

<sup>193</sup>Os Levels

E(level) <sup>†</sup>	J <sup>π</sup> <sup>‡</sup>	T <sub>1/2</sub>	Comments
0.0	3/2 <sup>-</sup>		
73.2 3	(5/2) <sup>-</sup>		
315.9 4	(9/2) <sup>-</sup>	110 ns 28	Configuration=9/2 <sup>-</sup> [505]. Configuration: from a comparison of the hindrance factor per degree of K forbiddenness in the neighboring <sup>187</sup> W and <sup>191</sup> Os nuclei, configurations of 9/2 <sup>-</sup> [505] and 9/2 <sup>+</sup> [624] are suggested. Systematics of these configurations in lighter odd-A Os isotopes suggest the 9/2 <sup>-</sup> [505] configuration is most likely. T <sub>1/2</sub> : from γ(t) of 242.7γ (2014Ga14). J <sup>π</sup> : from configuration assignment in 2014Ga14.
558.6 5			
868.0 6			
905.1 6			
970.8 6			
1196.2 7			

<sup>†</sup> From Eγ.

<sup>‡</sup> From Adopted Levels, except where noted.

γ(<sup>193</sup>Os)

R<sub>ADO</sub> ratios are from the <sup>192</sup>Os(<sup>82</sup>Se,<sup>81</sup>Se) experiment.

E <sub>γ</sub> <sup>†</sup>	I <sub>γ</sub> <sup>‡</sup>	E <sub>i</sub> (level)	J <sub>i</sub> <sup>π</sup>	E <sub>f</sub>	J <sub>f</sub> <sup>π</sup>	Mult.	Comments
73.2 3		73.2	(5/2) <sup>-</sup>	0.0	3/2 <sup>-</sup>		E <sub>γ</sub> : from Table 1 of 2014Ga14. A value of 72.9 keV is given in the authors' Figure 3.
242.7 <sup>@</sup> 3		315.9	(9/2) <sup>-</sup>	73.2	(5/2) <sup>-</sup>	[E2]	
242.7 <sup>@</sup> 3	100 15	558.6		315.9	(9/2) <sup>-</sup>		
309.4 <sup>#</sup> 3	27 4	868.0		558.6			R <sub>ADO</sub> =0.74 10.
328.2 <sup>#</sup> 3	17 3	1196.2		868.0			R <sub>ADO</sub> =0.74 13.
346.5 <sup>#</sup> 3	19 3	905.1		558.6			R <sub>ADO</sub> =0.63 10.
412.2 <sup>#</sup> 3	40 6	970.8		558.6			R <sub>ADO</sub> =1.63 15.

<sup>†</sup> Authors provide a general statement that systematic uncertainties are 0.1 to 0.6 keV depending on the energy region. Evaluator

$^{192}\text{Os}(^7\text{Li},^6\text{Li}\gamma)$  **2014Ga14** (continued) $\gamma(^{193}\text{Os})$  (continued)

assigns  $\Delta E\gamma=0.3$  keV.

‡ From the  $^{192}\text{Os}(^82\text{Se},^81\text{Se})$  experiment.

# Observed only in the  $^{192}\text{Os}(^82\text{Se},^81\text{Se})$  experiment.

@ Multiply placed.

 $^{192}\text{Os}(^7\text{Li},^6\text{Li}\gamma)$  **2014Ga14**

## Level Scheme

Intensities: Relative  $I_\gamma$ 

## Legend

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

