^{177}Hf(n,n′γ)　　1979Bo42

	Type	Author	History Citation	Literature Cutoff Date
	Full Evaluation	F. G. Kondev	NDS 159, 1 (2019)	30-Aug-2019

Target: ^{176}Hf containing about 23% of ^{177}Hf. Fast neutrons with intensities of 10^6 n/cm^2/s. Measured Eγ, Iγ. Detector: Ge(Li) with a resolution of about 5 keV at Eγ=1 MeV placed at 90° relative to the beam direction at a distance of 50 cm from the target.

^{177}Hf Levels

E(level)[†]	J$^{\pi}$[‡]	E(level)[†]	J$^{\pi}$[‡]	E(level)[†]	J$^{\pi}$[‡]	E(level)[†]	J$^{\pi}$[‡]
0.0	7/2$^-$	321.1 7	9/2$^+$	508.2 8	5/2$^-$	604.3 8	7/2$^-$
112.6 7	9/2$^-$	409.1 8	13/2$^-$	554.1 13	13/2$^+$	746.1 8	(7/2)$^+$
248.0 10	11/2$^-$	426.6 10	11/2$^+$	589.2 12	15/2$^-$	847.1 8	9/2$^+$

[†] From a least-squares fit to Eγ.

[‡] From Adopted Levels.

$\gamma(^{177}$Hf)

E$_\gamma$[†]	I$_\gamma$[†]	E$_i$(level)	J$^{\pi}_i$	E$_f$	J$^{\pi}_f$	E$_\gamma$[†]	I$_\gamma$[†]	E$_i$(level)	J$^{\pi}_i$	E$_f$	J$^{\pi}_f$
105[‡]		426.6	11/2$^+$	321.1	9/2$^+$	425 1	9 4	746.1	(7/2)$^+$	321.1	9/2$^+$
113[‡]		112.6	9/2$^-$	0.0	7/2$^-$	^{x}466 1	10 3				
208.4 5	140 20	321.1	9/2$^+$	112.6	9/2$^-$	492 1	21 5	604.3	7/2$^-$	112.6	9/2$^-$
233 1	10 3	554.1	13/2$^+$	321.1	9/2$^+$	^{x}538 1	10 3				
248 1	60 7	248.0	11/2$^-$	0.0	7/2$^-$	604 1	10 4	604.3	7/2$^-$	0.0	7/2$^-$
296.5 5	36 8	409.1	13/2$^-$	112.6	9/2$^-$	735 1	26 5	847.1	9/2$^+$	112.6	9/2$^-$
341.2 5	12 5	589.2	15/2$^-$	248.0	11/2$^-$	746 1	13 5	746.1	(7/2)$^+$	0.0	7/2$^-$
395.6 5	16 4	508.2	5/2$^-$	112.6	9/2$^-$	847 1	≤40	847.1	9/2$^+$	0.0	7/2$^-$
420 1	5 3	847.1	9/2$^+$	426.6	11/2$^+$						

[†] From 1979Bo42, unless otherwise stated. ΔEγ was assigned by the evaluator.

[‡] Not observed in 1979Bo42. Rounded off value from adopted gammas is given.

[x] γ ray not placed in level scheme.

^{177}**Hf(n,n$'$γ)**   **1979Bo42**

Legend

Level Scheme

Intensities: Relative I$_\gamma$

I$_\gamma$ < 2%×I$_\gamma^{max}$
I$_\gamma$ < 10%×I$_\gamma^{max}$
I$_\gamma$ > 10%×I$_\gamma^{max}$

Level	Energy	γ transitions
9/2$^+$	847.1	847 ≤40, 735 26, 420 5
(7/2)$^+$	746.1	746 13, 425 9
7/2$^-$	604.3	604 10, 492 21, 341.2 12
15/2$^-$	589.2	233 10
13/2$^+$	554.1	
5/2$^-$	508.2	395.6 16
11/2$^+$	426.6	
13/2$^-$	409.1	105, 296.5 36
9/2$^+$	321.1	208.4 140
11/2$^-$	248.0	248 60
9/2$^-$	112.6	113
7/2$^-$	0.0	

$^{177}_{72}$Hf$_{105}$