^{198}Pt(^{136}Xe,Xγ) 2001Wh01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 177, 1 (2021)	3-Sep-2021

2001Wh01: E=780 MeV ^{136}Xe was produced from the 88-inch cyclotron at LBNL. Target was 7 mg/cm^2 95.7% enriched ^{198}Pt on a 50 mg/cm^2 natural Pb backing. ^{194}Os levels populated in deep inelastic reaction. γ rays were detected with a 8π array consisting of 20 Compton-suppressed Ge detectors and a BGO inner ball. Measured Eγ, $\gamma\gamma$-coin. Deduced levels, J^π, band structure. Systematics of neighboring Os isotopes.

High-spin study using other heavy-ion reactions:

2014DrZZ: ^{186}W,^{187}Re,^{192}Os(^{136}Xe,Xγ),E=6 MeV/nucleon, measured Eγ, Iγ, $\gamma\gamma$-coin, in-beam and out-of-beam γ ray spectra using Gammasphere array at ATLAS-ANL facility. In-beam γ rays are reported at 219, 314, 383, 456, 530, 661 and 940 keV. Out-of-beam γ rays are reported at 194, 219, 314, 350, 383, 456, 530, 555, 661, 718 and 767 keV, implying a high-lying and high-spin isomer in ^{194}Os, analogous to those in ^{192}Os. In an alignment plot, the g.s. band was extended to 16$^+$, and a K^π=3$^-$ band was shown up to 13$^-$. Contacted Greg Lane at ANU, May 29, 2019, for further information. His reply of May 29, 2019 mentioned that details of this work will be forthcoming sometime within a year or so.

^{194}Os Levels

E(level)[†]	J$^\pi$[†]	Comments
0[‡]	0$^+$	
218[‡]	(2$^+$)	
601[‡]	(4$^+$)	
1131[‡]	(6$^+$)	
1792[‡]	(8$^+$)	
2541?[‡]	(10$^+$)	This level is treated as questionable by the evaluators due to the reassignment of 749γ by 2017Da06.

[†] As given in 2001Wh01.
[‡] Band(A): g.s. band.

γ(^{194}Os)

E$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
218	218	(2$^+$)	0	0$^+$	
383	601	(4$^+$)	218	(2$^+$)	
530	1131	(6$^+$)	601	(4$^+$)	
661	1792	(8$^+$)	1131	(6$^+$)	
749[‡]	2541?	(10$^+$)	1792	(8$^+$)	This placement is not confirmed by 2017Da06, as the 749 γ is observed in coincidence with 218γ, but not with 382γ. 2017Da06 placed this γ from a 967, J=3 or 3$^+$ level.

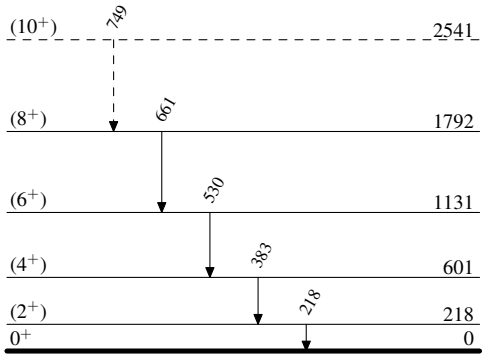
[†] From 2001Wh01.
[‡] Placement of transition in the level scheme is uncertain.

Legend

^{198}Pt(^{136}Xe,Xγ) 2001Wh01

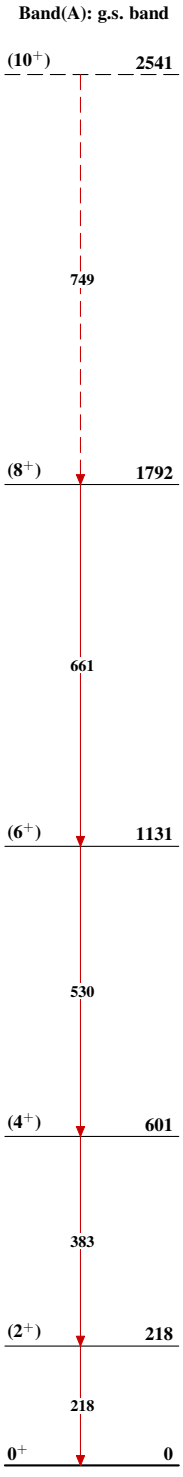
Level Scheme

γ Decay (Uncertain)



$^{194}_{76}Os_{118}$

^{198}Pt(^{136}Xe,Xγ) 2001Wh01



$^{194}_{76}Os_{118}$