

$^{176}\text{Yb}(^{136}\text{Xe}, ^{137}\text{Xe}\gamma)$ 2005Nc01

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jin Wu	NDS 206,1 (2025)	29-Oct-2024

2005Nc01: Excited states of ^{175}Yb were populated via neutron transfer reaction $^{176}\text{Yb}(^{136}\text{Xe}, ^{137}\text{Xe})$ at a beam energy of 750 MeV and maximum intensity of about 1 pnA using an enriched ^{176}Yb target of about 2 mg/cm² thickness backed with a thick layer of Au. The emitted γ rays were detected by the AFRODITE spectrometer consisting of eight Compton-suppressed clover detectors and seven LEPS Ge detectors. Measured E_γ , I_γ , $\gamma\gamma$. Single-neutron transfer reaction.

 ^{175}Yb Levels

E(level) [†]	J ^π	E(level) [†]	J ^π	E(level) [†]	J ^π	E(level) [†]	J ^π
0.0 [‡]	7/2 ⁻	380.6 [#] 5	13/2 ⁻	685.0 ^{&} 6	15/2 ⁺	1074.5 ^{&} 7	19/2 ⁺
104.50 [#] 34	9/2 ⁻	384.7 ^{&} 6	11/2 ⁺	742.7 [#] 6	17/2 ⁻	1185.7 [#] 8	21/2 ⁻
231.7 [‡] 4	11/2 ⁻	523.9 [@] 6	13/2 ⁺	868.4 [@] 7	17/2 ⁺	1437.2 [‡] 9	23/2 ⁻
267.2 [@] 4	9/2 ⁺	551.0 [‡] 5	15/2 ⁻	954.6 [‡] 7	19/2 ⁻		

[†] From a least-squares fit to E_γ 's, assuming $\Delta(E_\gamma)=0.5$ keV.

[‡] 7/2[514], $\alpha=-1/2$.

[#] 7/2[514], $\alpha=+1/2$.

[@] 9/2[624], $\alpha=+1/2$.

[&] 9/2[624], $\alpha=-1/2$.

 $\gamma(^{175}\text{Yb})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
104.5	104.50	9/2 ⁻	0.0	7/2 ⁻	256.7	523.9	13/2 ⁺	267.2	9/2 ⁺
117.5	384.7	11/2 ⁺	267.2	9/2 ⁺	267.2	267.2	9/2 ⁺	0.0	7/2 ⁻
127.3	231.7	11/2 ⁻	104.50	9/2 ⁻	276.0	380.6	13/2 ⁻	104.50	9/2 ⁻
139.1	523.9	13/2 ⁺	384.7	11/2 ⁺	300.2	685.0	15/2 ⁺	384.7	11/2 ⁺
148.7	380.6	13/2 ⁻	231.7	11/2 ⁻	319.5	551.0	15/2 ⁻	231.7	11/2 ⁻
161.9	685.0	15/2 ⁺	523.9	13/2 ⁺	343.8	868.4	17/2 ⁺	523.9	13/2 ⁺
162.7	267.2	9/2 ⁺	104.50	9/2 ⁻	362.0	742.7	17/2 ⁻	380.6	13/2 ⁻
170.2	551.0	15/2 ⁻	380.6	13/2 ⁻	390.5	1074.5	19/2 ⁺	685.0	15/2 ⁺
183.2	868.4	17/2 ⁺	685.0	15/2 ⁺	403.6	954.6	19/2 ⁻	551.0	15/2 ⁻
191.8	742.7	17/2 ⁻	551.0	15/2 ⁻	443.0	1185.7	21/2 ⁻	742.7	17/2 ⁻
205.1	1074.5	19/2 ⁺	868.4	17/2 ⁺	482.6	1437.2	23/2 ⁻	954.6	19/2 ⁻
231.7	231.7	11/2 ⁻	0.0	7/2 ⁻					

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Level Scheme

