

$^{136}\text{Xe}(\alpha, n\gamma)$ 1987Pr06

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	P. K. Joshi, B. Singh, S. Singh, A. K. Jain		NDS 138, 1 (2016)	15-Oct-2016

E=20, 22 MeV. Measured excitation functions ($E\alpha=20\text{--}27$ MeV), $E\gamma$, $I\gamma$, $\gamma\gamma$ -coin, $\gamma(\theta=25^\circ\text{--}155^\circ$, 9 angles), and $\gamma(t)$.

 ^{139}Ba Levels

E(level)	J^π [†]	$T_{1/2}$	Comments
0.0	$7/2^-$		
627.2 3	$3/2^-$		
1283.2 3	$(9/2^-)$		
1308.1 3	$11/2^-$		
1538.9 5	$13/2^+$		
1828.7 [‡] 5	$(15/2^-)$		J^π : stretched Q γ to 1308, $11/2^-$ level.
1850.9 5	$(11/2^-)$		
1977.1 [‡] 6	$(17/2)$	0.40 ns 25	J^π : stretched D γ to $(15/2^-)$. $T_{1/2}$: from $\gamma(t)$.
2091.6 [‡] 6			
2743.4 [‡] 6			

[†] As proposed in 1987Pr06 based on $\gamma(\theta)$ data for some of the transitions, and earlier assignments for low-lying states. Predictions of particle-core coupling model are also used.

[‡] Established on the basis of $\gamma\gamma$ -coin spectra with gates on 1308.1 γ and 230.8 γ .

 $\gamma(^{139}\text{Ba})$

Assigned to ^{139}Ba on the basis of $\gamma\gamma$ -coin.

E_γ [†]	I_γ [‡]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [#]	Comments
114.5 [@] 3	3 [@] 2	2091.6		1977.1	$(17/2)$		
148.4 3	21 2	1977.1	$(17/2)$	1828.7	$(15/2^-)$	D	$A_2=-0.26$ 8; $A_4=+0.10$ 12
230.8 3	23 2	1538.9	$13/2^+$	1308.1	$11/2^-$	(D)	$A_2=-0.18$ 13; $A_4=+0.04$ 23
520.6 3	72 13	1828.7	$(15/2^-)$	1308.1	$11/2^-$	Q	$A_2=+0.77$ 30; $A_4=-0.61$ 40
567.7 3	31 6	1850.9	$(11/2^-)$	1283.2	$(9/2^-)$		
627.2 3	51 8	627.2	$3/2^-$	0.0	$7/2^-$		
1204.5 3	54 26	2743.4?		1538.9	$13/2^+$		
1283.2 3	33 16	1283.2	$(9/2^-)$	0.0	$7/2^-$		
1308.1 3	325 30	1308.1	$11/2^-$	0.0	$7/2^-$	(Q)	$A_2=+0.45$ 7; $A_4=-0.05$ 11

[†] Upper limit on ΔE given.

[‡] At $E\alpha=20$ MeV and $\theta=90^\circ$, unless otherwise stated.

[#] From $\gamma(\theta)$ data.

[@] Deduced from 520.6 γ -gated coin spectrum. Intensity at $E(\alpha)=22$ MeV.

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Level Scheme

Intensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{\max}$
- $I_\gamma < 10\% \times I_\gamma^{\max}$
- $I_\gamma > 10\% \times I_\gamma^{\max}$
- Coincidence
- Coincidence (Uncertain)

