

${}^1\text{H}({}^{27}\text{F}, {}^{27}\text{F}'\gamma)$ 2004E110

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 112, 1875 (2011)	30-Nov-2010

2004E110: ${}^1\text{H}({}^{27}\text{F}, {}^{27}\text{F}'\gamma)$; ${}^{27}\text{F}$ was obtained by bombarding a ${}^{181}\text{Ta}$ target with a primary beam of ${}^{40}\text{Ar}$, $E=94$ MeV/u; reaction products were momentum and mass analyzed using the RIPS fragment separator at RIKEN, and identified by energy loss, time-of-flight and magnetic rigidity; the secondary beam of ${}^{27}\text{F}$, $E=40$ MeV/u, directed to a liquid hydrogen target; E_γ was measured using a setup of 146 NaI(Tl) scintillator detectors.

 ${}^{27}\text{F}$ Levels

E(level)	J^π [†]	Comments
0.0	(5/2 ⁺)	
777	(1/2 ⁺)	
1281?	(1/2 ⁻)	E(level), J^π : From 777 keV 50404 keV γ -rays. Spin/parity assignment from a comparison with other fluorine isotopes, however was not supported by theoretical calculations. The derived octapole deformation parameter $\beta_3=0.72$ do not contradict to the assumption of the existence of a deformed 1/2 ⁻ state in ${}^{27}\text{F}$.

[†] From Adopted Levels.

 $\gamma({}^{27}\text{F})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
504 [†] 15	1281?	(1/2 ⁻)	777	(1/2 ⁺)
777 19	777	(1/2 ⁺)	0.0	(5/2 ⁺)

[†] Placement of transition in the level scheme is uncertain.

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Legend

Level Scheme-----► γ Decay (Uncertain)