

$^{147}\text{Sm}(^{19}\text{F},4\text{n})$ 1980BeYG

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 195,1 (2024)	19-Sep-2023

Additional information 1.

1980BeYG used the $^{147}\text{Sm}(^{19}\text{F},4\text{n})$ reaction to produce ^{162}Lu in order to study those ^{162}Yb levels that were produced in the decay of ^{162}Lu . The center-of-mass energy of the $^{147}\text{Sm}+^{19}\text{F}$ system was 80 MeV, chosen to optimize the contribution of the 4n channel relative to those of the 3n and 5n channels. A 1 mg/cm² target of ^{147}Sm (enrichment not reported) was used. After bombardment, the target was rotated to a counting position "off-line", where the γ radiation was studied using a large-volume Ge(Li) detector. The γ spectra were measured at nine different times over a period of ≈ 5.3 min to determine the half-lives of the ^{162}Lu parent states. Levels in ^{162}Lu decaying with half-lives of 81 s, 93 s and 114 s were observed.

 ^{162}Lu Levels

E(level)	J^π	$T_{1/2}^\dagger$	Comments
0	1^-	1.37 min 2	$T_{1/2}$: from adopted values. J^π : from the Adopted Values. Value previously suggested by 1980BeYG, by analogy with the situation in ^{164}Lu , where 1^- and 4^- states are also expected at low energies in ^{162}Lu . Possible configuration is $(\nu 3/2[521])-(\pi 1/2[411])$.
x	(4^-)	1.5 min	J^π : value suggested by 1980BeYG. By analogy with the situation in ^{164}Lu , 1^- and 4^- states are expected at low energies in ^{162}Lu . The possible configuration is $(\pi 5/2[402])+(\nu 3/2[521])$.
y		1.9 min	

† from 1980BeYG, $\gamma(t)$, unless noted otherwise.