^{219}Bi β^- decay (22 s) 2014Mo02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh et al. ,	NDS 175, 1 (2021)	19-May-2021

Parent: ^{219}Bi: E=0; J^π=(9/2$^-$); $T_{1/2}$=22 s *7*; Q(β^-)=3640 *SY*; %β^- decay=100.0

^{219}Bi-J^π,$T_{1/2}$: From ^{219}Bi Adopted Levels.

^{219}Bi-Q(β^-): 3640 *200* (syst,2021Wa16).

^{219}Bi-%β^- decay: %β^-=100 for the decay of ^{219}Bi.

2014Mo02: ^{219}Bi produced in ^{9}Be(^{238}U,X),E=1 GeV reaction, ^{238}U beam provided by the UNILAC-SIS accelerator facilities at GSI with an intensity of 1.5×10^9 ions/spill (a repetition of 3 s and an extraction time of 1 s). The reaction products were separated and identified in the magnetic spectrometer Fragment Separator (FRS). Separation of ^{219}Bi nuclei is based on Bρ-ΔE-Bρ scheme. At the focal plane, the recoils were slowed down in an Al degrader and implanted in a composite DSSSD detector system comprising of 3 layers, each with 3 DSSSD pads with 16x16 pixels, and dimensions of 5x5 cm^2 and 1 mm thick. The DSSSD detectors were surrounded by the RISING γ-ray spectrometer comprised of 105 HPGe crystals arranged clusters of seven elements. Measured Eγ, Iγ, $\gamma\gamma$-coin, $\beta\gamma$(t) coin in coincidence with implanted recoils.

No decay scheme could be constructed from the observed 12 γ rays and several $\gamma\gamma$-coin relationships.

γ(^{219}Po)

E$_\gamma$[†]	I$_\gamma$	Comments
[x]72	39 *13*	
[x]163	14 *6*	
[x]183	54 *16*	183γ in coin with 264, 390 and 564 γ rays.
[x]231	50 *16*	
[x]264	45 *15*	264γ in coin with 183γ.
[x]287	23 *10*	
[x]347	38 *13*	347γ in coin with 373γ.
[x]373	23 *10*	373γ in coin with 347, 390 and 564 γ rays.
[x]390	50 *17*	390γ in coin with 183, 347 and 373 γ rays.
[x]445	28 *12*	
[x]462	14 *8*	462γ in coin with 564γ.
[x]564	100 *29*	564γ in coin with 183, 373 and 462 γ rays.

[†] Uncertainty is within the intrinsic FWHM of the RISING Ge-detector array.

[x] γ ray not placed in level scheme.