



Measurement of Mass and Linear Attenuation Coefficients of Gamma-Rays of Alanine for 0.662, 1.170, 1.280 and 1.330 Mev Photons

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ABSTRACT

Gamma –ray transmission methods have been used accurately for the study of the properties of biological sample such as alanine. In this study mass and linear attenuation coefficients of gamma-rays of Alanine for 0.662, 1.170, 1.280 and 1.330 MeV photons are determined by using NaI (Tl) scintillation detector. The radioactive sources used in the experiment were Cs^{137} , Co^{60} and Na^{22} . Mass (μ/ρ) and linear attenuation coefficients (μ) of alanine for 0.662, 1.170, 1.280 and 1.330 MeV gamma-rays photons have been measured using the well-type scintillation spectrometer. Measurements have been made to determine gamma ray attenuation coefficients very accurately by using a narrow-collimated-beam method which effectively excluded corrections due to small-angle and multiple scattering of photons. The values of μ and μ/ρ thus obtained are found to be in good agreement with the theory.

Keywords: Mass attenuation coefficients, Linear attenuation coefficients, Gamma rays, Alanine.
