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Measurement of Mass and Linear Attenuation Coefficients of Gamma-Rays of protein (Collagen sample) from 10 keV to 1500keV 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 Collagen sample of protein. In this study mass and linear attenuation coefficients of gamma-rays of Collagen sample of protein for 122, 356, 511, 662, 1170, 1275 and 1330 keV photons are determined by using NaI (Tl) scintillation well-type detector. The radioactive sources used in the experiment were Co^{57} , Ba^{133} , Na^{22} , Cs^{137} and Co^{60} . 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, proteins, Collagen.
