

Molecular level signatures of tissues, native proteins, fat and DNA using Wide-angle X-ray Scattering technique

Wael M Elshemey

Biophysics Department, Faculty of Science, Cairo University, Egypt

X-ray scattering from tissues and biological macromolecules at low incident photon energies is dominated by coherent scattering, where the angular distribution of scattered photons exhibits one or more broad peaks. These peaks arise from the molecular interference effects, which is the interference of photons, coherently scattered from molecules in the medium. The resulting scattering profiles are found characteristic to the scattering molecules. They hold useful information on tissues, proteins, fat and DNA in their native forms. The present work discusses some useful applications of the technique in the biological and medical fields.