



## Summary:

The phenomenon whereby a molecule, after absorbing radiations, emits radiation of a longer wavelength is known as fluorescence. The compounds that fluoresce or phosphoresce contain either an electron-donating group (amines, alcohols, and hetero atoms) or multiple conjugated double bonds (aromatic rings). Notice that these groups contain either nonbonding or  $\pi$  electrons. The presence of the groups that tend to withdraw electrons (e.g., carboxyl, azo, the halides, and nitro groups) usually destroy fluorescence. The instrument used to measure fluorescence is known as fluorometer. Fluorescence spectroscopy is becoming a more and more popular instrumental technique for providing direct and indirect exploratory information about chemical and physical properties of food products. The primary reasons are the high specificity, the high sensitivity, and that several substances inherent to food systems exhibit intrinsic fluorescence, such as proteins, vitamins, secondary metabolites, pigments, toxins, and flavoring compounds. Polarimetry is a sensitive nondestructive technique for measuring the optical activity exhibited by inorganic and organic compounds. It was discovered by Étienne-Louis Malus, a French engineer who was studying reflective glass. Several years later another Frenchman, Jean-Baptiste Biot, found that molecules such as sugar could rotate polarized light as well. In the laboratory, the technique of polarimetry is used to distinguish between enantiomers and to measure the extent to which each enantiomer rotates the plane of plane-polarised light. The optical instrument used for determining the polarization properties of light beam and samples is called a polarimeter.