My research interest is in the general areas of Photophysical Photochemistry to develop novel paradigms for understanding the behaviour of fluorescent molecular probing in organised assemblies like micelles, microemulsions & cyclodextrins also to understand interactions fluorescent drugs in organised assemblies. Currently my research area focussed on following aspects.

Spectral Behaviour of Some Drugs in Organized Assemblies:
To study the interaction of fluoroquinolone drugs like Norfloxacin, Ciprofloxacin and Oxfloxacin with organized assemblies like micelle and cyclodextrine using UV-visible and Fluorescence spectrophotometer. Investigating the pK of ground state and excited state of fluoroquinolone drugs in micelle and cyclodextrin in order to understand the effect of medium (micelle and cyclodextrin) on pK. Investigating the localization and binding of drugs in organized assemblies (micelle and cyclodextrin) by interpreting the absorption and emission spectral behaviour and fluorescence quenching process.

Behaviour of Some Synthesized Dyes In Organized Assemblies:
Exploring the solvatochromic behaviour of some synthesized cyanine &azo dyes in various solvents and surfactant systems. To explain the solvent effect of dyes, multi-parameter regression model has been used to quantitatively asses the solute (Dyes)/solvent interaction. Also investigating the influence of nature of surfactants (cationic, anionic and non-ionic) on aggregational behaviour of dyes by interpreting the spectral behaviour. Determining the pKa values of synthesized azo dyes in mixed solvents in order to establish the effect of solvent on the pKa values.

Significant Publications


Hydrogen bonding of the solvents with the azo dyes