

Intramolecular Charge Transfer in Organized Assemblies : Fluorescence of 3-Acetyl-4-oxo-6, 7-dihydro-12H indolo-[2,3-a] quinolizine in Reverse Micelles

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Abstract - Intramolecular charge transfer (ICT) fluorescence of a biologically active fluorophore, 3-acetyl-4-oxo-6,7-dihydro-12H indolo-[2,3-a] quinolizine (AODIQ) has been studied in reverse micelles formed by sodium bis(2-ethylhexyl)sulfo succinate (AOT) in heptane using steady state fluorescence, fluorescence anisotropy and picosecond time resolved fluorescence anisotropy. The charge transfer (CT) fluorescence exhibits appreciable red shift along with an enhancement of the fluorescence yield in the reverse micellar environment upon increasing water/surfactant mole ratio (W). This is associated with a sharp decrease in the fluorescence anisotropy (r), which suggests that the overall motional restriction experienced by the molecule is decreased with increased hydration. Metal induced fluorescence quenching study at different W has been exploited to determine the micellar aggregation number as a function of W.