

0.5 ms (neat dimethylformamide (DMF)) to 1.1 ms (DMF:C₂H₅OH, 3:2) were found. The difference in values reflects the influence of the solvent quality.

(iii) α,ω -Dianthrylpolystyrene was irradiated in dilute solution with 25 ns flashes of 347 nm light. From triplet-triplet (T-T) absorption measurements, rates of T-T annihilation, corresponding to rates k_{intra} of intramolecular end-to-end collisions, were obtained as functions of chain length N . In benzene at 22 °C $k_{\text{intra}} = \text{constant} \times N^{-1.0}$ with $N = 110$ to $N = 3000$. In cyclohexane at 34 °C $k_{\text{intra}} = \text{constant} \times N^{-1.5}$ for $N \leq 300$ and $k_{\text{intra}} = \text{constant} \times N^{1.0}$ for $N \geq 300$.

Fluorescence and energy transfer of dye-detergent systems in the premicellar region

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The fluorescence lifetimes of dyes and also the energy transfer between dyes with closely located S₁ levels were studied in the presence of detergents. These dye-detergent systems can be considered as one of the model membrane systems of chloroplasts and show some peculiar features when the detergent has the opposite charge to that of the dye. A long dimer-like lifetime was observed in the acridine orange-sodium lauryl sulphate (AO-SLS) system in the pre-micellar region, *i.e.* for [SLS] a little less than the critical micelle concentration (CMC). The energy transfer efficiency between rhodamine 6G (Rh-6G) and pinacyanol (PC) in the presence of SLS showed a distinct peak in the pre-micellar region. These findings and the absorption and fluorescence spectra revealed that the dye molecules are associated with dye-rich induced micelles which reduce the average distance (AO-AO or Rh-6G-PC) between dye molecules in the premicellar region.

Twisted intramolecular charge transfer state formation and other properties of some triazinyl dyes

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Fluorescence from the dipolar planar intramolecular charge transfer excited singlet state of the dye *N,N*-diethyl-4-(dichloro-1,3,5-triazinyl)aniline (TA) is strongly quenched by solvents of even moderate polarity (at room temperature