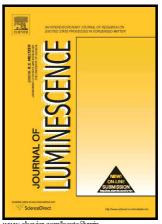
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Investigation on ionic states of 1,2-Dipalmitoyl-sn-glycero-3-phosphorylcholine (DPPC) using organic laser dyes: A FRET study

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ABSTRACT

Fluorescence Resonance Energy Transfer (FRET) between two organic dyes Fluorescein and Rhodamine 6G were successfully investigated in aqueous solution in presence and absence of 1,2-Dipalmitoyl-sn-glycero-3-phosphorylcholine (DPPC) at different pH. Spectroscopic studies suggest that both the dyes were present mainly as monomer in solution. FRET occurred from Fluorescein to Rhodamine 6G in solutions. Energy transfer efficiency increases in presence of DPPC and the maximum efficiency was 59.3% when the concentration of DPPC was 1.4×10⁻⁴ M at ambient condition. pH plays a crucial role in this investigation as the energy transfer efficiency was found to change in presence of DPPC at different pH. It has been demonstrated that with proper calibration it is possible to use the present system under investigation to realize various ionic states of DPPC by observing the change in FRET efficiency between these two dyes.

Graphical Abstract

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