

STUDY OF ORGANIZED ASSEMBLIES AND SURFACES USING PICOSECOND LASERS

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In nature, the most important chemical and biological processes occur in self-organized molecular assemblies. Confinement of probe fluorophores in a small region and the markedly different local polarity, viscosity and pH in such an organized assembly compared to bulk liquids profoundly influence the structure, reactivity and chemical dynamics. We found that in such organized assemblies several ultrafast processes e.g. solvation dynamics, excited state proton transfer, intramolecular charge transfer and photoisomerization are dramatically slowed down, in some cases by four orders of magnitude compared to ordinary solutions. Among the organized assemblies we studied micelles, microemulsions, lipid vesicles, polymer hydrogels, zeolites etc. We will discuss some of these dramatic results.

References:

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