

Light Harvesting and Charge Separation in π Conjugated Supramolecular Aggregates

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In order to reduce global warming and other environmental problems, there is an alarming need to switch to green and clean renewable energy sources. Among all the renewable energy sources, solar energy has easy accessibility in most of the parts of the world. To use the solar energy two process are important, one is harvesting of the solar energy to produce excitons and other is separation of these excitons into free charges. Here in this talk, I will show two different systems for one is for energy harvesting and other is for charge separation and storage. For energy harvesting, to increase the Shockley Quizzier limit, we are working on singlet fission.^{1,2} In this work we try to engineer singlet fission in a chiral peptide backbone by attaching singlet fission chromophore with it and for charges separation we synthesized a heptazine based covalent organic framework. In my talk I will discuss the idea behind these projects and the synthesis of these new materials.

References:-

1. Letters, C. P. ET1 G\$Es the. 442–446 (1977).
2. Rao, A. & Friend, R. H. Harnessing singlet exciton fission to. (2017).