

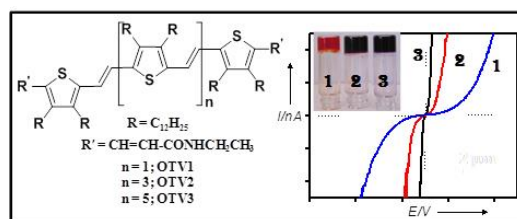
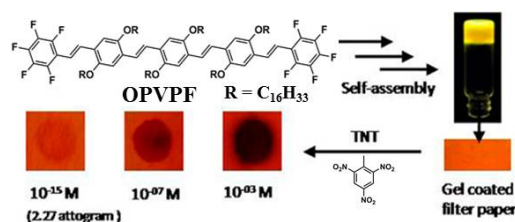
Photoinduced Processes in π -System Assemblies

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Fluorescence is one of the most sensitive photoinduced processes of conjugated aromatic systems. Fluorescent molecules are widely used in materials and biology. For example, fluorescent molecules are used in OLEDs, as sensors for analytes, for protein labeling and cell imaging etc. Fluorescence can be significantly perturbed by self-assembly of molecules. We have shown several examples of self-assembled molecular materials that show interesting fluorescence properties.¹⁻⁵ These soft materials are excellent scaffolds as energy donors and can be used for the sensing and imaging applications. For example, recently we have shown that a fluorescent gelator encapsulated within a polymer matrix undergoes reversible fluorescence color change upon heating and subsequent exposure to an appropriate solvent vapor.⁶ In another example, we have demonstrated that self-assembled gelators can be used for the detection of nitro aromatics, particularly TNT at attogram level on a contact mode.⁷ We are currently focusing on photoinduced charge carrier properties of self-assembled semiconductors.⁸ Results of these studies will be discussed.



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