Title:	Light-Induced Conformational Change in Supramolecular Assembly
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Keywords:	Biocompatible Azobenzene Molecular Design
Issue Date:	10-Sep-2018
Publisher:	IISERM
Abstract:	The term Supramolecular Polymers (SPs) can be defined as polymeric system which extends beyond the molecule and uses noncovalent interaction to make their assembly, to regulate their conformations. This SP gained much more attention during recent years in the scientific community. Due to their strong and unidirectional noncovalent interaction not only they can achieve some of the essential properties of conventional covalent polymers like their viscosity but also some excellent functionalities which are not present in covalent polymers such as processability, and recycling. In this MS thesis, on the topic "Light-Induced Conformational Change in Supramolecular Assembly", we are focusing on stimuli-responsive Far-From-Equilibrated System. The major objective of this thesis is to develop light induced dynamic molecular assemblies as functional nanomaterials owning dynamic instability with enhanced recyclability and this can create a new paradigm: life-like adaptive and functional materials in which functionality can be controlled by light as an external stimulus. The dynamic instability of nanoassemblies (out-of-equilibrium) could be executed by means of molecular switching that changes their conformations and properties reversibly by light as an external stimulus. In devising far-from-equilibrated SP with high turnover number of recyclability, azobenzene featuring ferrocene conjugates are designed and synthesized in which azobenzene moiety exploits light as a source of energy whereas ferrocene unit executes the molecular switching at a great level. Unlike the conventional systems, the photoisomerization of azobenzene unit on exposure to UV and subsequent spontaneous-back-isomerization provides a means to reassemble the system, respectively. The first chapter deals with the basic introduction of SPs, its Properties and Molecular design. The second chapter includes the synthetic schemes we followed and the experimental procedures. In the third chapter, results and discussion and the future work that would be carried out.
URI:	http://hdl.handle.net/123456789/1037 (http://hdl.handle.net/123456789/1037)
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