Laboratoire PPSM – UMR CNRS 8531

Photochimie et Photophysique Supramoléculaires et Macromoléculaires

Séminaire PPSM

Mardi 18 mai 2016 - 10h30

Auditorium D. Chemla - Bâtiment IDA

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«Design of functional materials for photoactive and smart devices»

Design of functional materials is an example of a multidisciplinary activity which combines physical, chemical and biochemical disciplines. The final aim is to create smart devices which express a desired function by a careful optimization and engineering of the material. For application in optics and optoelectronics, a leading position is reserved to photoactive material as functional layers. Among them, photochromic systems are an intriguing class of smart switches thanks to their reversible light-sensitive behavior[1-2]. In this framework, by engineering the photochromic material to express the modulation of the desired property, a series of concept devices based on diarylethenes are proposed. In particular, photoactive masks in optical lithography [3-4], light-triggered resistors based on a photoactive polymer and carbon nanotubes [5], and a photochromic capacitor [6]. Another reference field for smart devices is the world of biomedical tools and biosensor devices. Materials engineering regards the creation of functional micro-nanostructured substrates based on biocompatible materials able to interacts with the biological world [8] or on the creation of bio-interfaces directly manipulating oligonucleotides to realize hybridization platforms [9].

Références

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