Laboratoire PPSM – UMR CNRS 8531

Photochimie et Photophysique Supramoléculaires et Macromoléculaires

Séminaire PPSM

Jeudi 3 octobre 2019 - 13h30

Auditorium D. Chemla - Bâtiment IDA

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Invité par : Rémi Métivier

«Design and Synthesis of UV-free Photochromic Derivatives»

The field of advanced photoactive nanomaterials, with photoswitching capabilities, is extremely active and has been attracting ever-growing interest in recent years for their various potential applications in biological sensors, targeted medicine, high-resolution fluorescence imaging, and innovative materials science. In this scope, we have been studied novel fluorescent photoswitchable organic molecules to produce efficient light-triggered nanomaterials [1,2].

My research started from the design and synthesis of highly fluorescent photochromic molecules to achieve the fluorescence photoswitching at the single-molecule level toward the realization of single-molecule optical memory. Very fortunately, we have been successfully revealed the molecular design principle for highly fluorescent photoswitchable molecules and demonstrated the fluorescence photoswitching even at the single-molecule level with the non-destructive readout capability [3-6]. After that, my research targets have been expanded to molecular assemble systems such as nanoparticles and polymer complexes, and we have been successfully prepared a highly efficient fluorescent photoswitchable nanoparticle (NP), in which a photochromic molecule is combining with a highly fluorescent molecule, very recently [7]. These results represent an extremely promising and challenging step towards smart photo-controllable nanodevices, and pave the way to a new generation of nanomaterials for innovative technologies on multicolor display, optical data storage, organic electronics, or bio-imaging [8,9]. In the seminar, I will talk about the development process of highly fluorescent photoswitchable molecule toward the high-density optical memory application.

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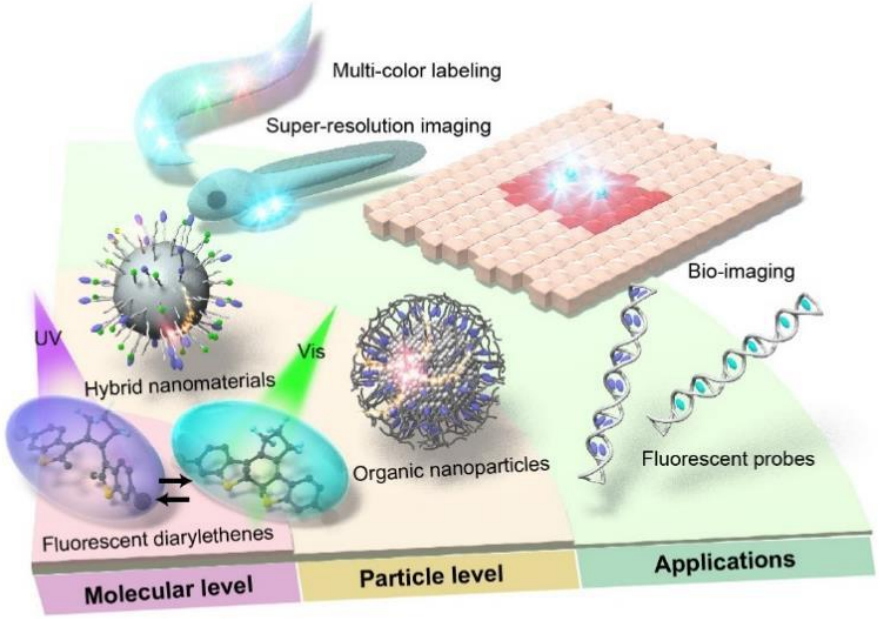

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