**ULTRAFAST ELECTRONIC PROCESSES IN (SUPRA)MOLECULAR SYSTEMS**

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Since the invention of pulsed lasers, time resolved spectroscopic methods observed tremendous developments. The research around the world in different fields from physics and chemistry to biology, medicine and material science, widely utilize ultrafast optical spectroscopies nowadays.

With pulse duration of 100 fs or less, it is possible to access most of the dynamics occurring in the excited electronic states: internal conversion, vibrational relaxation, intersystem crossing and many other processes leading to reactive pathways. The interplay between different electronic states often corresponding to different molecular geometries can be revealed and these studies can be profitable for the conception of new intelligent materials.

In this report, I will present numerous applications of practical value we continue to develop exploiting photoinitiated electronic processes in molecular and supramolecular systems. Since molecular association affects the energies of electronic levels, chemical recognition is among the most natural applications exploiting the energy and electron transfer in these supramolecular compounds [1]. As well as chemical sensing when energy or electron transfer is present but also photocatalytic processes can be initiated [2], singlet oxygen generation can be obtained [3], excited state lifetime can be spectacularly increased [4], etc.

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2. L. Harmand et al, , Angewandte Chemie International Edition, **51**, 7137 (2012).
3. P. Batat et al, Journal of Physical Chemistry A, **115**, 14034 (2011).
4. Y. Leydet et al, Journal of the American Chemical Society, **129**, 8688 (2007).