

2013年度 講演会

Dr. Michel SLIWA

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Exploring the dynamics of
photoactive systems by
chemometrics and ultrafast
spectroscopy



日時: 2013年 4月18日(木) 10:30 – 12:00
場所: 化学教室第4講義室(大学院講義棟)

※ 講演要旨については別紙をご覧ください。

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Title : Exploring the dynamics of photoactive systems by chemometrics and ultrafast spectroscopy

Abstract : New photoactive systems such as metal complexes, nanoparticles and supramolecular systems have attracted increasing attention as new bio-potential materials for optical and electronic devices, solar energy conversion, photo-drug delivery and high resolution optical imaging. The synthesis, use and performance of these new photo-systems are limited, mainly due to the fact that the photodynamic scheme involves several pathways dependent of the excitation wavelength, strong influence of the environment, different intermediates and photo-products with kinetic time constants covering the range from femtosecond to several millisecond time scales. We will discuss here several photoactive systems such as photochromic and fluorescent organic nanoparticles, copper complexes for solar energy conversion, bi-photochromic systems, bioluminescent complexes ... We will show here how time resolved spectroscopy, from UV-Vis to IR domain, and from nanosecond to femtosecond time scale with the help of advanced data analysis can provide rationalized description of the process investigated.

[1] C. Ruckebusch, M. Sliwa*, P. Pernot, A. de Juan, R. Tauler, Comprehensive data analysis of femtosecond transient absorption spectra: a review, *J. Photochem. Photobiol. C, J. Photochem. Photobiol. C*, 2012, 13, 1– 27

[2] M. Sliwa*, P. Naumov, H. Choi, Q. Nguyen, B. Debus, S. Delbaere, C. Ruckebusch, Effects of a Self-Assembled Molecular Capsule on the Ultrafast Photodynamics of a Photochromic Salicylideneaniline Guest, *Chem. Phys. Chem.*, 2011, 12, 1669

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