



Highly conjugated organometallic complexes as suitable candidates for molecular nonlinear optics applications

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Résumé en anglais

The non-linear optical properties of π -conjugated of organometallic complexes and their derivatives have recently gained particular interest due to their extended π -system and the strong electron donating character[1]. The knowledge of the nonlinear optical response, as well as the impact of the charge transfer on the nonlinearity is very important. Such systems can be used in a variety of applications particularly for molecular nonlinear optics applications. In this contribution nonlinear optical response of self-assembled molecular corners will be also presented as such class of molecular systems could be controlled with external stimuli, particularly using ultrafast light is of great importance for nanophotonics applications like optical computing, optical switching, because they could be used as building blocks for more complicated molecular systems. Sub molecular components, like rotaxanes, catenanes could be suitable and promising candidates for nonlinear optical applications [2]. In this talk nonlinear optical response of orthogonal tetrathiafulvalene-based bricks, which can be self-organized into orthogonal dimers, through metal assisted assembly with Pd(II) or Pt(II) salts will be also discussed. A Comparative study of the nonlinear optical response will be given.

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[2] K. Iliopoulos, R. Czaplicki, H. El Ouazzani, J. Y. Balandier, M. Chas, S. Goeb, M. Salle, D. Gindre, B. Sahraoui,, Physical origin of the third order nonlinear optical response of orthogonal pyrrolo-tetrathiafulvalene derivatives, *APL* 97 101104 2010

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