

Stereospecific multichromophoric systems based on organosilicon matrixes: synthesis and photophysical properties

Yuriy N. Kononevich*¹, Anastasia S. Belova¹, Anton A. Anisimov¹,
Viacheslav A. Sazhnikov², Nikolay M. Surin³, Evgeniya A. Svidchenko³,
Olga I. Shchegolikhina¹, Aziz M. Muzafarov^{1,3}

¹ *A.N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, 119991 Moscow, Russian Federation*
E-Mail: kononevich.yuriy@gmail.com

² *Photochemistry Center, Russian Academy of Sciences, 119421 Moscow, Russian Federation*

³ *N.S. Enikolopov Institute of Synthetic Polymeric Materials, Russian Academy of Sciences, 117393 Moscow, Russian Federation*

Supramolecular systems of different structure are unique objects that allow to study a number of important processes at the molecular level, such as various intermolecular interactions, complexation, energy transfer, formation of binary associates in the ground and excited states (ground-state dimers, excited-state dimers, excimers) and others. It is known that stereospecific functional derivatives of cyclosiloxanes of various dimensions allow very fine adjustment of both the number of corresponding fragments and their orientation in space, which opens wide opportunities for the creation of supramolecular architectures with unique properties.^[1] It should be expected that the production of multichromophore systems based on stereospecific cyclosiloxane derivatives will allow to create model molecular systems in which chromophores with high probability involved in intramolecular π - π interactions and form excimers. In this work we describe the synthesis of such systems based on wide range of organosilicon matrixes and their physicochemical and photophysical properties.



Figure 1. Schematic representation of stereospecific multichromophoric systems based on organosilicon matrixes.

[1] A.A. Anisimov, Yu.N. Kononevich, M.I. Buzin, A.S. Peregudov, O.I. Shchegolikhina, A.M. Muzafarov, *Macroheterocycles* **2016**, 9, 442-452.

This work was supported by Russian Science Foundation (project no. 14-23-00231).