**Full Paper** 

Registration Code of Publication: 13-35-9-116 Subsection: Applied Chemistry. Publication is available for discussion in the framework of the on-line Internet conference "Butlerov readings". http://butlerov.com/readings/ Contributed: May 6, 2013.

## Laser radiation impact on the polyelectrolyte microcapsules modified with fluorescein isothiocyanate

© Irina V. Marchenko,<sup>1,2</sup> Gennady S. Plotnikov,<sup>3</sup> Anatoly N. Baranov,<sup>3</sup> Alexander M. Saletsky,<sup>3</sup> and Tatiana V. Bukreeva<sup>1,2</sup>

<sup>1</sup>A.V. Shubnikov Institute of Crystallography, RAS. Leninsky prospekt, 59. Moscow, 119333. Russia. E-mail: iramarchenko85@mail.ru <sup>2</sup> SRC «Kurchatov Institute». Academician Kurchatov Sq., 1. Moscow, 123182. Russia. <sup>3</sup> Physical faculty of Lomonosov Moscow State University. Leninskie Gory, 1, bl.2. Moscow, 119991. Russia.

\*Supervising author; <sup>+</sup>Corresponding author

Keywords: polyelectrolyte microcapsules, dyes, laser radiation.

## Abstract

Polyelectrolyte capsules become promising technological object due to their monodispersity with a wide range of variation of size, ease of controlling the permeability, ease of changes and a wide choice of material for shells. To create systems for the specific delivery of drugs we need to perform the remote control of permeability of shells. One of the ways of shell destruction is laser radiation. In this study, there were obtained polyelectrolyte capsule shells with the inclusion in the molecules of fluorescein isothiocyanate. Inclusion of dye molecules into the capsule shell enables the possibility of photosensitized destruction of such structures. We investigated the dependence of the temperature of capsule size. We investigated the dependence of capsule size on temperature. On heating the suspensions of capsules there was observed irreversible decrease in the mean radius of the capsules.