

## SURFACE MODIFICATION OF MAGNETITE-GOLD DUMBBELL NANOPARTICLES WITH FLUORESCENT DYES FOR NEW OPPORTUNITIES IN VISUALIZATION

Alexandra Prelovskaya, National University of Science and Technology MISIS  
Sasha.prelove@gmail.com

Nurgustaana Neustroeva, National University of Science and Technology MISIS

Natalia Sviridenkova, National University of Science and Technology MISIS

Alexander Savchenko, National University of Science and Technology MISIS

Alexander Majouga, Moscow State University, National University of Science and Technology MISIS

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Due to unique properties, magnetic nanomaterials are widely used in many branches of science and technology. One of the most perspective and actively developed areas are biomedical application: the target drug delivery, magnetic hyperthermia, biosensors and contrasting materials for magnetic resonance imaging (MRI). Hybrid materials based on nanoparticles with different surface nature as well as different chemical properties represent particularly especial interest. Such materials can be control modified in various ways simultaneously, in particular with drugs and targeted molecules. Surface modification of nanoparticles with fluorescence dyes opens horizons for visualization capabilities, also allows us to trace the behavior of particles in a biological environment, which is essential for their future biomedical applications [2].

In this work we developed synthetic procedure for of magnetite-gold dumbbell nanoparticles modified with different copolymers containing Fluorescein and modified with Sulfo-Cy5 NHS. Obtained nanoparticles were characterized by variety of methods such as DLS, ICP-MS, and fluorescence microscopy. More detailed information for the synthesis, characterization and biological testing will be discussed in report.

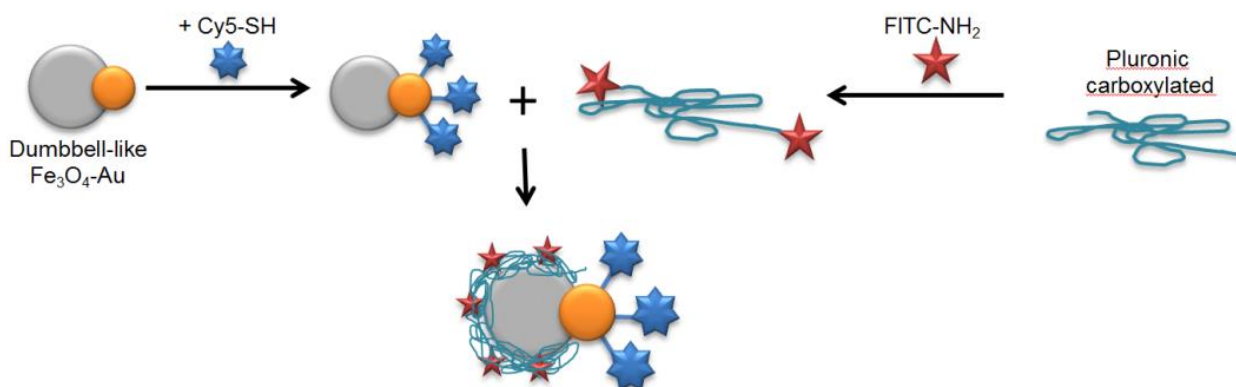


Figure 1. Synthesis of magnetite-gold dumbbell nanoparticles modified with different copolymers containing Fluorescein on magnetite and modified with Sulfo-Cy5 NHS on gold particles.

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