

NANODIAMONDS AS FLUORESCENT PROBES WITH UNLIMITED PHOTOSTABILITY

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Abstract

In recent years, diamond nanoparticles have received a great deal of attention due to their unique photophysical and biological properties. They are used as promising near-infrared luminescent probes and sensors in biomedical research, possessing unique properties such as absolute photostability and high biocompatibility.

A complex route towards bioapplicable fluorescent nanodiamonds (NDs) will be presented. It includes boosting of ND fluorescence [1], shaping the ND particles to become pseudospherical [2,3], separation of particles by size and also creation of antifouling polymeric coating on fluorescent NDs [4]. These probes can be bioorthogonally modified with various (bio)molecules using click chemistry and targeted to cancer cells with unprecedented effectivity [5]. New types of plasmonic particles bearing a thin gold shell on a ND core and their use in cancer thermoablation will be also presented [6].

Keywords: Nanodiamond, fluorescence, probe, imaging, biocompatibilization, plasmonics

LITERATURE:

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