

Title: Influence of functionalized nanoparticles of different sizes, material, and surface properties on cellular machinery

Author: Mariia Uzhytchak

Department: Department of Optical and Biophysical Systems, Institute of Physics of the Czech Academy of Sciences

Supervisor: Mgr. Oleg Lunov, PhD., Department of Optical and Biophysical Systems, Institute of Physics of the Czech Academy of Sciences

Abstract:

Last few decades nanoparticles (NPs) have emerged as promising tools in the nanomedicine field as theranostic agents. The influence of functionalized nanoparticles with different sizes, material compositions, and surface properties on cellular machinery has attracted significant research interest. Understanding these influences is crucial for the development of safe and effective nanomedicines. This study aims to explore the impact of functionalized nanoparticles on cellular machinery and kinetics. Hereby, the thesis is focused on the importance of gaining knowledge in the field of nanomedicine while considering potential harms associated with nanomaterials application.

Keywords: cell culture, cell signaling, cytotoxicity, nanoparticles, drug delivery