

## **1 Summary**

In the thesis are in details described various methods of pharmaceutical nanoparticles preparation, their surface properties and incorporated drug release. Some relevant data concerning prospective use of nanosystems in pharmacotherapy are presented. The main orientation of the thesis is towards experimental laboratory working. Experiments are supported by the use of Nanosizer and Zetasizer device. Nanoparticles with the size under 200 nm from various oligoesters with the linear and branched constitution of carrier molecules were fabricated. The aim of the thesis was focused on stability of size and surface charge parameters during their storage under different thermal conditions and under static and dynamic state of hydrophilic external phase after preparation process. Liquid systems containing freshly prepared nanoparticles were spray dried with the mannitol used as additive. The processes including range of stress factors, such as mannitol as osmotic agent dissolution, spray drying operation, and nanoparticles contained in microparticles in aqueous medium dispersion were evaluated from the point of view of size and zeta potential parameters. It was concluded from the experimental results that method based on spray drying of nanoparticulate systems and incorporation of nanoparticles into the microspheres is advantageous and fruitful method for liquid nanosystems stabilization.