ABSTRACT

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Title of thesis Study of formulation polyester nanoparticles

An overview of basic types of nanoparticles used in anti–tumor therapy and a description polyethylenglycol usage for the surface of nanoparticles modification which leads to a so called EPR effect that is used for transmission of drugs to tumor cells are presented in the theoretical part of this work.

The main scope of this work is in the experimental part. Nanoparticles from a branched alifatic polyester were prepared by fast moving homogenizator (stator/rotor type). It was used the method of emulgation of polymer solution in methylethylketon in a aqueous phase consisted of natric laurylsulphate or cetyltrimethyamonium bromide and chloride. Tenzides were used in an extremely low concentrations. The size of nanoparticles was measured by a PCS method and the zeta potential was measured microelectroforetically.

The proces of homogenization was studied in different time intervals. The homogenization was performed at diffent temperatures. New facts about the opposite processes of dispergation and aglomeration influencing the size of the nanoparticles and their charge were achieved. The changes in parameters after the preservation of nanodispersions can be definitely used as a support material for further studies of possible processing of middle-products.