ABSTRACT

Master thesis contains an explanator ynote volume 90 page. Explanatory note contains 16 images, 6 tables, 19 literary sources.

Object of study – the formation of melt urea synthesis reactor.

Purpose – the creation of mathematical model of process of formation of the urea melt, the analysis of transient characteristics of the process, modeling process, given the uncertainties in the control system, design robust H∞-controller in the control system, the solution of the problem of optimization of a contro lsystem.

The method of investigation - mathematical modeling process and factor-target analysis process, methods of robust H∞-regulator.

The analysis of the process of production afloat urea and researched mathematical model of the process in the reactor based parametric uncertainties. Mathematical model of the object used to calculate the optimum control system through the synthesis of H-∞ controller. Was used as an integral indicator for management and measurement system output. The system was tested for stability by Kharitonov theorem.

Keywords: reactor, synthesis, urea, control system, circuit management, facility management, mathematical model, static characteristic, the channel disturbances, channel management, dinamic characteristics, parameter uncertainty, the regulator, optimization, robustness, stability, sensitivity, safety.