

## **Abstract**

Bachelor's degree diploma project entitled: «Automation of synthesis of urea from a two-stage distillation afloat» includes an explanatory note of 88 pages, data sheet for functional scheme of 8 pages, 3 sheets of drawing in A1 format and broadsheets.

Explanatory note contains 6 chapters, 1 addition and 11 references.

In bachelor's degree diploma project has been made the analysis of the technological scheme of the synthesis of urea from a two-stage distillation afloat as the automation object. Has been developed the functional diagram for automating this process and circuit diagram of remote control, scheme of emergency protection and technological locks.

In project I consider the features of distillation column as objects of control. For the same device developed the mathematical models of static and dynamic modes. With the help of these models are made calculations of static characteristics of disturbance and control channels. Have been made calculations of the reliability of distillation column and analyzed ways to improve it. In the same section, conclusions and recommendations on the use of certain regulators are made.

When performing diploma project were used methods of automatic control theory and mathematical modeling.

Basic results of my work can be used for preliminary estimation of parameters and settings of the real control systems.

Keywords: distillate, reflux, distillation, rectification, refrigerator distillate, loop control, scheme of automation, mathematical model, static characteristics, channel disturbance, control channel, dynamic characteristics , safety engineering, hardware specification.