

Abstract

Bachelor's degree diploma project entitled: «Automation of production biogas» includes an explanatory note of 81 pages, data sheet for functional scheme of 7 pages, 1 sheet of drawing in A1 format, 2 sheets of drawing in A2 format and broadsheets.

Explanatory note contains 5 chapters, 1 addition and 12 references.

In bachelor's degree diploma project has been made the analysis of the technological scheme of production biogas as the automation object. Has been developed the functional scheme for automating this process and circuit diagram of remote control, scheme of emergency protection and technological locks.

In project I consider the features of heat exchanger 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 the system 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: biogas, substrate, heat exchanger, gasholder, fermenter, loop control, scheme of automation, mathematical model, static characteristics, channel disturbance, control channel, dynamic characteristics, safety engineering, hardware specification.