SUMMARY

Explanatory note: 122 pages, 36 figures, 20 tables, 6 appendices, 32 sources in the list of links.

FISCHER-TROPSH SYNTHESIS, MODELING, RESEARCH, KINETICS, REACTORS, SUSPENSION REACTOR, CONTROL, PETROCHEMICAL INDUSTRY

The object of study is a heterogeneous-catalytic process for the production of hydrocarbon fuels from gas synthesis by the Fischer-Tropsch scheme, the Fischer-Tropsch suspension reactor.

The purpose of the work is to develop software to calculate the parameters of the Fischer-Tropsch suspension reactor, to develop software to calculate the control leakage of the temperature controller.

Research methods - mathematical model of the reactor, mathematical model of the regulator.

The result of this work is software that can be used to calculate the parameters of a suspension reactor according to the Fischer-Tropsch scheme under specified conditions and to calculate the control signal of the controller for temperature under specified conditions.

The urgency of the work - today, despite the tendency to look for alternative sources of energy and fuel, it is very important to have software that would allow to simulate internal processes, pressure and temperature parameters, output of products inside the reactor. In addition, by determining the effect of these parameters on the system as a whole, you can control these parameters to maximize the yield of the target products, which will automate the process by reducing the impact of human factors.