SUMMARY

Bachelor's diploma consists of 85 pages, 24 figures, 5 tables and graphic part on 3 pages.

Analytic overview of metal-cutting lathes was done. According to task an induction motor for electric drive of feed lathe was selected. The quality requirements of transients during cutting were specified.

The synthesis of current, flux, speed and position regulators was performed. The conditions of monotony transients were defined.

The parameters of induction motor with squirrel cage was calculated that were necessary for further modelling in Matlab Simulink environment. An frequency converter was selected.

An model of induction motor and it`s vector control system with modified position regulator was designed at Matlab Simulink. Verification of meeting requirements was performed by simulating.

The graphical part includes a principle electric circuit, charts of transients, appearance of lathe.

DIRECT FIELD ORIENTED CONTROL,MAIN ELEMENTS CALCULATION OF FREQUENCY CONVERTER, CONTROL METHODS, SIMULATION IN SIMULINK, CALCULATIONS OF INDUCTION MOTOR PARAMETERS,