

## SUMMARY

The diploma project comprises: pages, 27 figures, 5 tables and graphical part on 3 pages A1.

The purpose of the project is to develop and research electromechanical system for racing EV for Formula SAE/Formula Student Electric competition.

In this work an analytical review of existing electric traction systems that is used by Formula Student teams. It is carried out the optimal traction system for use by Formula Student KPI. It was developed mathematics model for simulation behavior of racing car, calculated power required for desired top speed and traction force of potential racing car.

The obtained results can be used for designing and building of a Formula SAE car, and give comparative characteristics with combustion vehicle.

The graphical part includes: the sketch of tractive system, the structure of the control algorithm, schematic circuit diagram of the traction system of electric vehicle and graphs of transients obtained by mathematical simulation

PERMANENT MAGNET SYNCHRONOUS MOTOR, ELECTRIC VEHICLE, FORMULA SAE, FORMULA STUDENT ELECTRIC, FIELD ORIENTED TORQUE CONTROL ALGORITHM.

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Checked	I. Shapoval					7		
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