

## SUMMARY

Thesis contains of 109 pages and 19 drawings. The graphic part contains of 6 sheets.

Structure of master thesis includes the following sections:

1. Analytical review of the literature;
2. Airplane dynamic model and definition his parameters;
3. Motor power calculation;
4. Power battery calculation based on load diagram;
5. Speed control for traction synchronous motor and mathematical modeling of dynamic and energy characteristics of the electric aircraft;
7. The technical implementation aspects for electric aircraft.
8. Start-up project design

The aim of the project is to develop procedures for designing the basic units of 4-seats electric aircraft for urban transport.

In thesis provides analytical review of literature, reviewed existing electric airplanes, inverter and power supply for aircraft. The aspects of the technical implementation of the key components of the power section are reviewed in the thesis. The algorithms of speed vector control and traction motors are simulated for necessary modes of full cycle of flying.

The graphical part includes drawing of airplane, block diagrams of algorithms, graphics dynamic processes and functional diagram of electro-mechanical system and electric drives.

ELECTRIC BUS, TRACTION MOTOR, BATTERY, TORQUE VECTOR CONTROL, MODELING, TRACTION INVERTER

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<i>Chan</i>	<i>Sh.</i>	<i>N° docum.</i>	<i>Sign.</i>	<i>Date</i>								
<i>Designed</i>		Zakharchenko Y.			The summary			<i>Liter.</i>	<i>Sh.</i>	<i>Scale</i>		
<i>Checked</i>		Peresada S							7	116		
<i>Reader</i>		Chumack V.						«Igor Sikorsky KPI», FEA, gr. EP-72mp				
<i>R. control</i>		Buryan S										
<i>Approve</i>		Peresada S.										