

SUMMARY

Diploma project contains: 123 pages; 37 figures; 26 tables; 5 of graphic sheets; 45 references.

The purpose of this diploma project is to develop a control system for a wind generator plant based on an asynchronous generator, which will provide the maximum output power of the winder with the simultaneous limitation of the amplitude of the stator voltage of the generator at speeds higher than the synchronous.

The developed control system of the wind generator on the basis of the asynchronous machine provides the regulation of the angular velocity of the asynchronous generator to achieve the maximum efficiency of the wind turbine at the variation of the wind speed and the regulation of the stator's flow of the asynchronous generator to limit the amplitude value of the stator's electromotive force at speeds higher than the synchronous one. To test the developed system, a simulator system was constructed in the MATLAB Simulink software environment, which consists of a complete model of an asynchronous machine in (a-b) coordinates, an indirect vector control system of the asynchronous generator, and a supplementary model of the wind turbine.

WIND GENERATOR, ASYNCHRON MACHINE, WIND TURBINE,
ANGULAR VELOCITY, FLUX LINKAGE, ELECTROMOTIVE FORCE,
OVER SYNCHRONOUS SPEED.

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