

SUMMARY

Diploma project contains pages 109, figures 40, tables 17, graphics sheet parts 6, 1 appendix, 28 bibliographic references.

The purpose of the work is to study the feasibility and development of a new strategy for controlling the modes of electric braking of regulated electric drives.

The use of methods of the theory of automatic control, the theory of electric drives, mathematical modeling, theoretical mechanics.

The results, obtained during the implementation of the master's thesis are: the review of controlled transformers was carried out, processes of their interaction with electric motors in the mode of electric braking were considered; Calculation of required power and parameters of the electric motor replacement circuit; developed algorithm for controlling the regenerative braking regime; carried out research of dynamic modes of traction electric drive; the energy efficiency of coordinated regulation of coordinates of the electric drive in the mode of braking with the ability to return energy to the network in the range of power of 30-110 kW is proved; shows the cost-effectiveness of the project, which exceeds UAH 18000.

ELECTRIC DRIVE, BRAKING, RECUPERATION, CONTROL,
SYNTHESIS, RESEARCH, DYNAMICS

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