

Annotation

In this thesis object of research is the traction synchronous electric drive of the trolleybus.

The work purpose – research of dynamic characteristics of the electric drive of the trolleybus.

The analysis of city passenger transport in which advantages and shortcomings of the trolleybus were revealed is moved. Then the comparative characteristic of trolleybuses, and requirements which are also imposed to them was made. On the basis of modern requirements to trolleybuses, in particular to the trolleybus electric drive, for research the electric drive of the AKCM 321 trolleybus was chosen.

Calculation of the key and additional parameters of the engine, parameters of an equivalent circuit and parameters of mechanical system was made.

Also calculation of forces of resistance to the movement was made. On the basis of calculations limit mechanical characteristics of the electric drive which defined area of work and admissible values of variables of the electric drive were constructed. Modeling which validated calculations was made for check.

Also calculation of system of vector control of the traction synchronous electric drive was made, parameters of the block diagram were calculated. Optimization of contours of regulation was made on a modular optimum. On the made imitating model modeling which showed adequacy of the adjusted system was made.

It was analyzed harmful and dangerous factors in trolleybus park. It is also considered safety of electricity. Calculation of natural lighting on a repair shop is made.

It is calculated capital an investment on repair and reconstruction of a repair shop.