MODERN CONTROL AND DIAGNOSTIC SYSTEM
OF A TRACTION VEHICLE WITH A HYBRID DRIVE SYSTEM

Zygmunt Szymański
Institute of Electrical Engineering and Automation in Mines, Silesian University of Technology Gliwice, Poland

Abstract
In paper introduced a review of modern traction vehicle drive system with induction motors drive system (PMSM with a single or dual rotor) or BLDC motor with different configuration of magnetic circuit. For particular part of drive system proposed a quasi intelligent control system version smart control, enables multicriterial, predictive control of vehicle work system. In the paper presented also a selected diagnostic procedures enables monitoring of exploitations parameters, and prediction of probable failure state. For different vehicle work state realized a simulation models and crash test a computer models of exploitations failure.

1. Introduction
The mass-development of internal-combustion transport creates real threats of natural environmental pollution, generates excessive noise, twitches and vibrations, and can be also a source of climatic changes. One of the variants to reduce this impact is the application of new type drive system: electric or hybrid (electric motor, electric motor and internal-combustion engine, drive composed with internal-combustion engine and mechanical energy container). Hybrid vehicles are an economically and technically most simple solution. Augmenting of classical internal-combustion drive system, electric motor diminishes fuel consumption, reduces issue of impurities, keeping at this dynamics and comfort of the vehicle drive. In paper introduced a review of modern wheel vehicle drive system with induction motors drive system (PMSM permanent magnet synchronous induction motor with single or dual rotor) or BLDC motor with different configuration of magnetic circuit. For hybrid drive system proposed a quasi intelligent control system version smart control, enables multicriterial, predictive control of vehicle work system. In paper presented also a selected diagnostic procedures enables monitoring of exploitations parameters, and prediction of probable failure state. For different vehicle work state realized a simulation models and crash test a computer models of exploitations failure.

6. Conclusion
The control system of hybrid drive wheel vehicle should take into account: kind of the drive (internal-combustion drive, electric drive), hybrid drive, kinematic system of vehicle (kind of the ignition, system of the drive carriage), and exploitive (the ground configuration, maximum speeds and accelerations) parameters. The use of deck-computers in hybrid vehicle will assure a realization of composite algorithms of the control, aside from of the driver interference, economic works of the vehicle and safe the vehicle exploitation. Quasi- dynamic control algorithms, the peck of modern measuring-sensors and intelligent control systems helping the driver work assure safe and energy-saving during vehicle exploitation. Diagnostic system installed in the vehicle signal potential damage states and prevent vehicle damage.

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