

Optimum management of the energy consumption of electric vehicles in order to reduce the loss of intelligent distribution networks

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Electric vehicles have attracted many countries in the last decade. The energy storage system in these vehicles is usually a collection of batteries that are always subject to problems such as overheating, low power storage capacity and low efficiency; therefore, the development of electric vehicles due to the costs of this occurrence Problems have been affected. An appropriate solution to overcome some of these problems and to improve the performance of the energy storage system is to build supercapacitors as auxiliary energy sources. The purpose of this thesis is to reduce the volume and losses of the energy storage system, as well as to integrate the system output stream, in addition to the use of a three-way converter in the duct as the interface between the battery, the supercapacitor and the electric motor, the mode of direct control of both The source (the battery and the crankcase) has been introduced through the switching of this converter, which is done through two control layers, including the fuzzy controller and the regulator block. Simulation results show that the proposed strategy is more effective than other methods. Key words: Supercapacitor, Battery, Energy storage system, Electric vehicle, Two way three-way converter in the duct.

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