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Fuzzy Logic Based Energy Management System for Hybrid Electric Vehicle

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Abstract

Hybrid electric vehicles have gained attention throughout the globe with its advantage of green technology and reduced greenhouse gases emission. Moreover, hybrid vehicles being powered by battery would be the best option of replacing current petrol or gas dependent vehicles. There are drawbacks though; battery has limited lifetime and is very costly. Hence, it is hybridized with other energy storage systems such as supercapacitor. This paper focuses on the energy management system for the energy storage system consisting battery and supercapacitor of a hybrid electric vehicle using fuzzy logic based controller. The energy management system, which manages energy feed between battery and supercapacitor, is then simulated in Matlab/Simulink to verify its reliability and validity of operation.

Keywords: Battery, Supercapacitor, Energy management, Fuzzy logic, Hybrid electric vehicle