Optimal control for hybrid power generating system in fuel cell hybrid vehicle

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The fuel cell vehicle uses dual power sources, the fuel cell as well as the electric battery. Development of the power distribution control system is very important for the efficiency and the durability of the fuel cell hybrid system. Robust optimal control logic for unpredictable driving situation is required. Therefore, the controller using fuzzy logic and the rigorous model of the battery and the PEMFC system is suggested for this control problem. The rigorous model of the Li-ion battery and the PEMFC system is developed. Fuzzy logic control strategy with rigorous system model for FCHV is suggested to improve system efficiency and durability as the battery and stack life. The system efficiency has been maintained near the good efficiency during the driving than empirical model application. The control logic is able to apply to various unpredictable driving schedules.