

## Operating control strategies of a plug-in fuel cell vehicle for the early commercialization

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The world's major automotive and energy companies have focused hydrogen fuel cell vehicles (HFCV) as one of the potential opportunities to the problems of conventional gasoline vehicles such as greenhouse gas and running out of fossil fuels. However as it comes to commercialization, the HFCVs have faced to their various limitations in terms of capital and operating cost, cold start, durability, and hydrogen infrastructure. Recently, plug-in fuel cell vehicles (PFCV) which can solve the mentioned problems have been proposed as early commercialized products instead of the HFCV. The PFCV has the large and rechargeable battery as well as the fuel cell. In this paper, the operating strategies of the PFCV using the computer-aided performance analysis have been proposed. The overall efficiency of the PFCV depends on the power distribution between the battery and the fuel cell. In addition, those operating controls are optimized based on the various driving duty. Consequently, the proposed method increases the efficiency and stability of the PFCV and thereby the commercialization of zero-emission vehicles is expected to be shortened.