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December 01-02, 2016 Valencia, Spain**Adaptive energy management strategy for a hybrid vehicle using energetic macroscopic representation****Hussein Basma**

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The energetic macroscopic representation is used in this paper to model a pre-transmission parallel hybrid electric vehicle and its control and energy management system. Since optimizing energy management onboard is among the key factors in reducing consumption of hybrid vehicles, several strategies are developed in the literature such as instantaneous-optimization rule-based strategies and global-optimization strategies; however, being implemented separately and for different purposes. For instance, rule-based strategies serve for real-time operation, where the global-optimization strategies for benchmarking, as it lacks the ability to be used in real-time control. Hence, the combination of both strategies would result in close-to-optimal energy consumption through a real-time control system. Therefore, a simple adaptive rule-based strategy is presented in this study, based on short-term driving pattern recognition and the global optimization routine of dynamic programming.

Biography

Hussein Basma has completed his Bachelor's degree in Mechanical Engineering in May 2016. He is enrolled now in the Power Train Graduate Program at IFP School in France. He has been working as an Assistant Researcher at Lebanese American University in Hybrid Vehicles Topics.

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