

## **Electrification Strategy of Hybrid Electric Vehicle as a Solution to Decrease CO<sub>2</sub> Emission in Cities**

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**Abstract :** Recently hybrid vehicles have become a major concern as one alternative vehicles. This type of hybrid vehicle contributes greatly to reducing pollution. Therefore, this work studies the influence of electrification phase of hybrid electric vehicle on emission of vehicle at different road conditions. To accomplish this investigation, a simulation model was used to evaluate the external characteristics of the hybrid electric vehicle according to variant conditions of road resistances. Therefore, this paper reports a methodology to decrease the vehicle emission especially greenhouse gas emission inside cities. The results show the effect of electrification on vehicle performance characteristics. The results show that CO<sub>2</sub> emission of vehicle decreases up to 50.6% according to an urban driving cycle due to applying the electrification strategy for hybrid electric vehicle.

**Keywords :** electrification strategy, hybrid electric vehicle, driving cycle, CO<sub>2</sub> emission

**Conference Title :** ICHEV 2016 : International Conference on Hybrid and Electric Vehicles

**Conference Location :** Vienna, Austria

**Conference Dates :** June 16-17, 2016