

Performance Analysis of Electric Vehicle using MATLAB/Simulink

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Abstract: *Electric vehicles (EVs) are likely to be an elective vitality mode of transportation for the long run because it features an incredible capacity to decrease the utilization of petroleum based and other tall CO₂ transmitting transportations powers. In this introduction, the components of the BEVs framework like a battery, control converter, impetus framework, on board charger framework, powers on vehicle were examined and a demonstration of BEV on the MATLAB-Simulink was re-enacted. This introduction basically centres on modeling, re-enactment, and examination of a BEV and its components as expressed over. Electric vehicles are potentially to be adopted for green technology applications due to their batteries' high power density and high energy density. An accurate EV model in a simulation platform is very important to design an efficient battery-powered system. In this paper, an electrical vehicle model is developed in MATLAB/Simulink. The structure of the EV is explained in detail, and an EV model is presented. The developed EV model is validated from the experiment results. From the comparison, it reveals that the developed model is capable of predicting current-voltage performance accurately. Although the model has been developed for Simple Electric vehicles, it is expected that it can be applied for other types of EV. In MATLAB results we have verified the change Velocity of electric vehicles due to change in drive cycle.*

Keywords: Battery Electric Vehicle (BEV), Drive Cycle, MATLAB/SIMULINK, Modeling, State of Charge (SoC).