

Efficient Electric Vehicle by using Supercapacitor

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Abstract: *From Recent years we know that the pollution problems has been increased tremendously and the cost of fossil energy such as oil, gas, etc are increasing rapidly. By considering this problem the vehicle manufacturer thought to manufacture the Lithium battery electric vehicle. But after manufacturing those electric vehicle the problems such as the battery weight and cost problems were not solved. The batteries must provide extra energy and high power during the transitory state. These are the drastic conditions for the batteries. To overcome these severe circumstances, the combination of batteries and super capacitors is analogous with a high-quality power management is present for a satisfying solution. Super capacitor is also known as Ultra-capacitor which store the energy that's why we can also called it as storage devices. This device helps to supply the high power to electrical vehicle during the transitory state. During the stationary state, batteries will furnish the energy requirement. This procedure enable to reduce the weight and it also increase the duration of the batteries. The super capacitors have move advantage over other conventional capacitor and the battery. The Ultra capacitor are mainly used to get better state. To get better state the necessity of giant amount of power for the short length of time duration. For the short time we can use Supercapacitor.*

Keywords: Supercapacitor.

REFERENCES

- [1]. Electric vehicle technology by Prof. Sunil Pawar
- [2]. Capacitors technology and trends by R P Deshpande.
- [3]. Nitin S. Padole, Prof.M.D. Khardennis "Comparative study of supercapacitor and Battery.
- [4]. Chukwuka, C, Folly, K.A. " Batteries and supercapacitors "IEEE PES Power Africa 2012Conferenceand Exposition Johannesburg, South Africa.
- [5]. AndrewbrukeZhengmaoLiu,HengbiugZhao,"PresentandFutureapplicationofsupercapacitor in electric vehicle& hybrid"IEEE2014.
- [6]. Power Electronics by Ned Mohan and Williams Robins
- [7]. Mdbelectrosoft.in
- [8]. Winter, M.; Brodd, R.J. What are batteries, fuel cells, and supercapacitors? Chem. Rev. 2004, 104, 4245–4269.
- [9]. Simon, P.;Gogotsi,Y.; Dunn, B. Where Do Batteries End and Supercapacitors Begin? Science 2014, 343, 1210–1211, doi:10.1126/science.1249625
- [10]. Pomerantseva, E.; Bonaccorso, F.; Feng, X.; Cui, Y.; Gogotsi, Y. Energy storage: The future enabled by nanomaterials. Science 2019, 366, eaan8285.
- [11]. P. Elbert et al. Capacitors vs. Batteries in a serial hybrid electric bus
- [12]. B. Frenzel et al. Electromobility concept for racing cars based on lithium-ion batteries and supercapacitors J. Power Sources (2011)