Abstract

As the green technology increases in popularity, more and more electric vehicles (EVs) of all kinds from electric scooters to cars to buses and cargo trucks will grace the roads. Electronic designers will be challenged to provide systems that can be adapted to a wide variety of different types to charge batteries fast. The key considerations that are best suited to meeting the challenges of fast charging systems. To make a device charge faster, either boost the amperage or vary the voltage in order to increase the amount of potential energy going to a device. This paper addresses the design of a new DC Fast Charge controller for EVs by using microcontroller based dc-dc converter, which provides both option either boost current or vary voltage. The proposed solution decreases the charging time of EVs and facilitates the integration of fast chargers in existing battery charging method.

References

1. Nordhavn project; Design - dimensioning of the energy infrastructure of future sustainable
Fast Battery Charge Controller for Electrical Vehicle

cities, http://www.energylabnordhavn.dk/


4. IEC 61851: Conductive charging system / DC EV charging station


7. exercise 4 “Battery Charging methods” © Festo Didactic 86351-00.

8. Fig. 6 : Battery Charging Current Vs Time

Index Terms

Computer Science  Circuits and Systems

Keywords

DC fast charging, dc-dc converter, Microcontroller.