

5. Title: A power factor correction converter-based charger for light electric vehicles

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Key words: Electric vehicles, Charging system

Domain: Electric Vehicle

Summary: A charging system for a light electric vehicle is developed to supply electric power from an external power supply to the in-vehicle battery. It provides an additional high step-down gain and improved power quality performances at the supply side. Further, it provides a general-purpose charging solution for various classes of light electric vehicles having different rating of battery packs. The charging station provides a general-purpose charging solution for various light electric vehicles with different rated voltage packs.

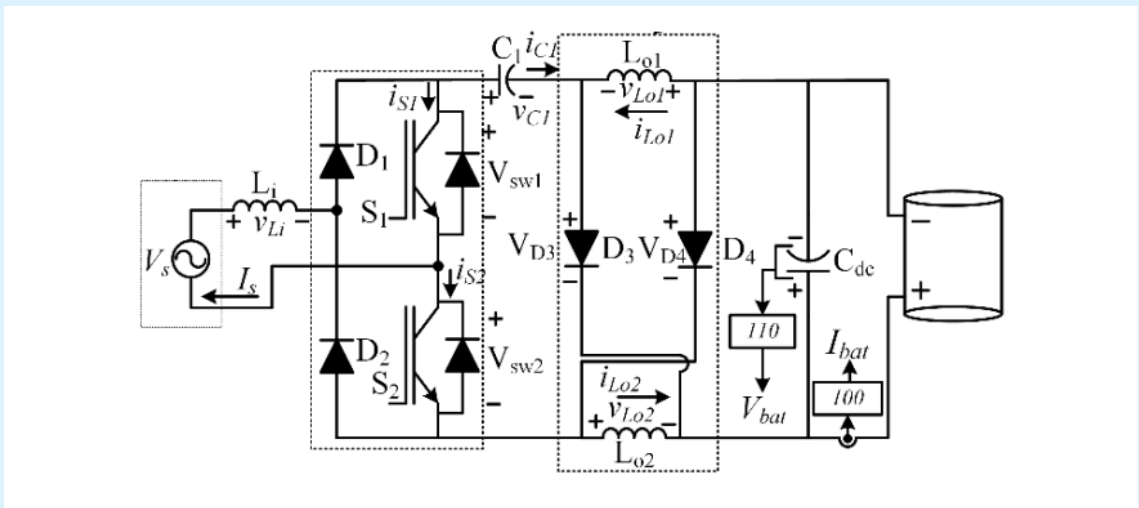


Diagram: Schematic of power factor correction converter-based charger for light electric vehicles

Advantages:

- » Power factor of 1 is obtained at AC mains which is better than existing chargers as they have 0.86
- » 5% distortions at supply side which is 45% lower than existing chargers
- » Peak efficiency of developed charger is 90% which is 20% more than existing chargers
- » Low cost as compared to existing chargers

Applications: charging of light electric vehicles, such as electric-2-wheelers and electric-3-wheelers

Scale of Development: A functional prototype charger is developed and tested in Laboratory environment for different values of battery ratings.

Technology Readiness Level: 4

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