

A Bidirectional Control Regenerative Braking Strategy for EV Applications- A Review

Shubham Anil Davane¹, Souras Ghotekar², Saurabh V Lawate³

Students of Department of Electrical Engineering Vidarbha Institute of Technology, Nagpur, India¹
Assistant Professor Department of Electrical Engineering Vidarbha Institute of Technology, Nagpur, India²
Assistant Professor Department of Electrical Engineering Vidarbha Institute of Technology, Nagpur, India³

Abstract: *In this paper, Review on bi-directional DC/DC buck-boost converter with dual control strategy during regenerative braking is used for a two-wheeler application. To reduce the harmful emissions from automobiles and massive surges in fuel prices, automotive electric vehicles are an effective alternate solution. In this paper, a cascaded bi-directional DC/DC buck-boost converter with dual control strategy during regenerative braking is used for a two-wheeler application. The dual control strategy with the cascaded converter is used to increase the average power stored during the braking period and to reduce the vehicle's stopping time. The converter with the proposed control strategy used in this work has made it possible to charge the battery even when the back emf of the machine is less than the battery voltage. A fuzzy logic control strategy is used to consider the non-linear factors like SOC, speed of the vehicle and the required brake force. This is done in order to make the system more reliable and realistic. implementing the dual control strategy, the average power stored by the battery is increased by 2.5 times and the vehicle comes to halt faster in comparison with the existing control strategy. The versatility of the strategy is shown by examining three different scenarios during the regenerative braking process.*

Keywords: Regenerative Braking, Bidirectional Converter, Fuzzy, SOC.

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