

## **BIDIRECTIONAL DC-DC CONVERTER FED DRIVE FOR ELECTRIC VEHICLE SYSTEM**

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### **Abstract**

This study is about the electric vehicle powered by bidirectional dc-dc converter . Batteries are the primary energy-storage devices in Electric Vehicles (EVs). Now days Battery fed electric drives are commonly being used for electric vehicles applications, due to various advantages, such as: nearly zero emission, guaranteed load leveling, good transient operation and energy recovery during braking operation. To fulfill these requirements converters with bidirectional power flow capabilities are required to connect the battery to the dc link of the motor drive system. Battery fed Electric Vehicles (BFEVs) is required to function in three different modes namely: acceleration mode, normal (steady-state) mode and braking (regenerative) mode. During acceleration and normal modes the power flow is from battery to motor where as during braking or regenerative mode the kinetic energy of the motor is converted into electrical energy and fed back to battery. In the present work closed loop operation of bi-directional dc-dc converter feeding a dc motor and its energy recovery due to regenerative braking has been demonstrated.

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**Keywords :** Electric Vehicle(EVs), Battery fed Electric Vehicles (BFEVs),Hybrid Electric Vehicle (HEVs), Pulse Width Modulated (PWM),Proportional-Integral(PI), Energy Storage System(ESS), Nickel-Metal hydride (NiMH)