IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 6, June 2022
Impact Factor: 6.252

A Novel Method for Vehicle Battery Charging System with Regeneration using Embedded System

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Abstract: *Industrial synchronous motors are used to increase the speed of a machine. It is more popular than other a.c. fixed-performance motor motors due to their longevity and great load capacity. Due to specific problems and difficulties, the speed regulation of the synchronous motor has not improved until recent improvements in the industrial sector. The goal of this project is to change the frequency of the automobile stator supply in order to manage the car's speed. The inverter for the three-phase MOSFET Bridge is used to acquire the voltage of the three-phase supply. MOSFET bridges are powered by a fixed dc power source acquired by using a diode bridge circuit to control the ac voltage found in ac mains. Filtering is done with a shunt capacitor filter. The process of a control circuit regulates the MOSFET Bridge. The control cycle contains the gating pulses required to unlock the MOSFET. The frequency output of the MOSFET Bridge is regulated by adjusting the frequency of the gating pulses. When the gating signal frequency changes, the MOSFET Bridge output frequency changes as well. As a result, we have the variable frequency's output. Because the hacking signal retrieved from the control hole is so weak, it cannot be used directly on the MOSFET Bridge. As a result, a driving circuit and an isolator are used. The opto Separator achieves the essential separation of the low-power control circuit from the high-power bridge.*

Keywords: Electric Vehicle, Battery charging System, Embedded System, Energy Regeneration, Microcontroller

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