

An Integrated Onboard Circuit Of Electric Vehicle For Activating Heating Mode And Driving Mode

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ABSTRACT

An onboard circuit (300) of an Electric Vehicle (EV) for activating battery heating mode or driving mode is proposed. The onboard circuit (300) comprises a sensor (302) to sense onboard circuit characteristic within the EV. A controller (304) selects at least one of a heating mode and a drive mode based on the onboard circuit characteristic. A converter circuit (100) comprising the controller (304), is connected to a battery (102) of the EV and a load (308). The converter circuit (100) operates at least one of the heating mode and the drive mode based on the controller's command. If the onboard circuit characteristic does not match a predefined threshold value, the heating mode is selected, else the drive mode is selected.

KEY APPLICATION AREAS

1. Electric vehicles (EVs).
2. EV battery thermal management.
3. Onboard power electronics.
4. Bidirectional DC-DC converters.
5. Battery management systems (BMS).
6. EV charging and powertrain systems.

POTENTIAL USE

1. Preheating EV batteries in cold climates.
2. Automatic switching between heating and driving modes.
3. Bidirectional power transfer between battery and load.
4. Battery charging and regenerative braking.

- 5.Improving battery performance, efficiency, and driving range.
- 6.Integrated onboard battery heating without additional circuitry.