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Title: Current and Temperature Analysis of Thermoelectric Generator for Regenerative Breaking of the Hybrid Electric Vehicle

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Abstract:

Electric vehicles are a vast, dynamic, and fast-growing topic that covers the reduced emissions in the environment, rising energy demand and consumption, ensuring the usage of green energy sources, and so on. With the growing research and development of electric vehicles on a global scale, regenerative braking of those vehicles is becoming increasingly important. The usage of the battery for covering a longer range is aimed here by utilizing this wasted heat energy of the vehicle, adding an extra source of advantage. This manuscript aims to present the proposed design of a Thermoelectric Generator (TEG) analyzing the relation between current and temperature for storing the electrical output in the battery for proliferating the driving range of the Hybrid Electrical Vehicles (HEVs). Following the concept of the regenerative braking system, the wasted heat energy generated from the kinetic energy of the vehicles is converted into electrical energy in this process.