Thermal Management of Batteries Using Super capacitor Hybrid Architecture With Idle Period Insertion Strategy

ABSTRACT

- In this paper, we propose the use of a simple parallel battery super capacitor hybrid architecture with a dual-mode discharge strategy that can provide immediate temperature management, in which the super capacitor is used as an energy buffer during the idle periods of the battery.
- Simulation results show that the proposed method can reduce the battery temperature during charge and discharge while exploiting the advantage of the parallel connection

EXISTING SYSTEM

- Thermal analysis and management of batteries have been an important research issue for battery-operated systems.
- However, this type of approaches cannot achieve an immediate temperature drop to avoid a thermal emergency situation.
- Approaches based on removing the heat from the heat sources via idle period insertion would allow faster thermal response.

PROPOSED SYSTEM

- We propose a reactive control policy for the proposed dual-mode hybrid architecture based on the practical observations.
- A reactive control scheme helps the architecture to deal with the change of circumstancesand battery internal characteristics just with small cost and computational overhead.
- We also apply the similar control policy for standard charge process, while it has been considered as a fully controlled process without severe thermal problem.

HARDWARE REQUIREMENTS

- Processor - intel core i3
- RAM - 2GB
- Hard Disk - 20 GB

SOFTWARE REQUIREMENTS

- Tool - MICRO WIND
- Operating system - Windows 7,8

REFERENCE

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