Design and Implementation of Battery Management System (Cell Balancing Module)

Ei Mon Soe[1], Myint Myint Than[2], and Pyone Ei Ei Shwe[1*]

[1]Department of Electronic Engineering Yangon Technological University, Yangon

soemoneimgy@gmail.com,libra.shwe@gmail.com

[2]Department of Electronic Engineering Yangon Technological University, Yangon

Myintmyintthan.ec@gmail.com

Abstract

This paper presents design and implementation of efficient battery management system (BMS). Battery Management System is the useful and popular system nowadays. Most of electronic devices are used battery management system for safety. The Battery management system is a system which monitors and controls the voltage, current and temperature. In this paper, using cell voltage balance block is not only used to protect over charging and discharging but also to know the voltage for each battery while charging. This block is comprised by PC817, IRF 540N MOSFET and voltage divider network. The cell balancing method is used passive cell balancing in this paper. Moreover, LM35 temperature sensor is used to measure the battery temperature. PIC 16F887 is using to control the battery's voltage, current and temperature. And then it is used to prevent from unsafe conditions such as overheating, over charging or discharging and display on LCD. MikroC language is used for program. Design and implementation of Battery Management system will be done by using PC 817, IRF 540, and PIC16F887, ACS 712 current sensor, LM35 and LCD display.

Keywords: Battery Management System (BMS), MikroC language, PIC 16F887, IRF540N MOSFET, PC 817.