ASSIGNMENT-3

ANURANJ.K
anuranjk@gmail.com

Q1 what is a BMS, and differentiate types of BMS ?.

BMS is the Battery management System, which is an electronic circuit system to managing a battery operations like charging and discharging and also handling the state of the battery. BMS monitors the SOC, SOH, DOD etc.. It ensures the smooth operation of the battery by controlling the charging and discharging at a specified range.

Battery management System controls all these parameters through effective monitoring. It gathers all data related to battery temperature, the flow of current in and out of the cell. If voltage required is increased it sends requests to lower the current limits thus it helps to ensure the saftey and life of the battery. BMS can store data and send the data with the protocalls. BMS provides with all cutoff like charging or discharging when needed.

There are two types of BMS, Hardware BMS, and Software BMS.

* Hardware BMS performs basic functions of the Battery like charging cutoff, under voltage, over voltage cutoff, over current detection, temperature cut off etc.

* Software or Smart BMS is the new type of BMS used with modern technology. It will function all the parameters of hardware BMS also it can store and send data. It having some Communication protocols like CAN, Bluetooth, IOT etc. This type of BMS can monitor also from remotely with smart softwares or Apps.

Q2. what are the technical parameters to keep in mind while procuring a BMS for assembling a battery pack-?

BMS work with the Battery pack according to the specification of each cells in the battery pack. while procuring a BMS it is need to know the specifications and Parameters of Battery Pack. Different type of Battery having different rating of charging current and voltage. The main parameter for BMS is as follows it will depends on Battery pack.

* Supplying a nominal voltage output
* Controlling the charging current
* Controlling the charging voltage
* Controlling discharging current & voltage
* Controlling the balancing of cells
* Controlling the temperature cutoff
* Controlling the State of health

The charging current & voltage is depend on the cells charging capacity. Also the discharging it will depends on cell capacity. BMS will cutoff the system while it reaches the specified level as it is designed with the cell parameters.

Q3 what is the purpose of BMS with communication? what are the various protocals of communications used in a BMS ?

BMS is a controlling and protective device. So it controlls the system according to the input received to it. By monitoring the data like SOC, DOD, SOH it controlls or cutt off the systems. So a data transfer and communication happening in Side the BMS system. These data need to be Communicated with vehicle then only the user will under stand state of the Battery. Usually the user need data like State of charge, charge to travel kilomeer, how much charge left, State of Battery health. These data displayed to user with Communication protocals. There are mainly three type of Communication

(1) CAN BUS System (Controlled Area Network)

It uses microcontrollers programs to Communicate with VCU. This is the basic Communication System which will display data to the cluster or vehicle Control unit monitor.

② Bluetooth Communication

It is a type of Software Bons. it Send data and Communicate with software or devices with bluetooth technology. It displays data to a wireless device of user. By using the Software, it can elaborate more functions of Bons from the input data.

③ IOT cloud Connectivity

It is the new technology that uses internet Connection for transmitting the data. it can be use even remotly from different area. also, it can give realtime data over internet with user remotly. Many of the modern vehicle uses IOT techology.