

A Simple Automatic Balancing Technique For Series Connected Lithium Ion Batteries Using Combination of Modified Shunting Resistor and Switched Capacitor

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Modification of shunting resistor by adding series connected several diodes makes balancing currents of individual cells in series connected lithium ion batteries adjusted automatically depends on the voltage of each cells. And combined with switched capacitor as charge transfer medium from the cell in the bottom to the cell in the top position at one modular batteries (as shown in figure) makes the balancing process continues and cycles from the bottom to the top of module. Another advantage of such modifications is a function like an automatic switch when the cell in overcharge condition. it is useful to prevent danger potentials due to overcharge. with modified shunting resistors by adding series connected diodes, the fear of overheating production (which usually occurs in conventional shunting resistor techniques) can be avoided. Thus this technique is applicable to an electric car battery balancing applications with low cost and no bulky components.

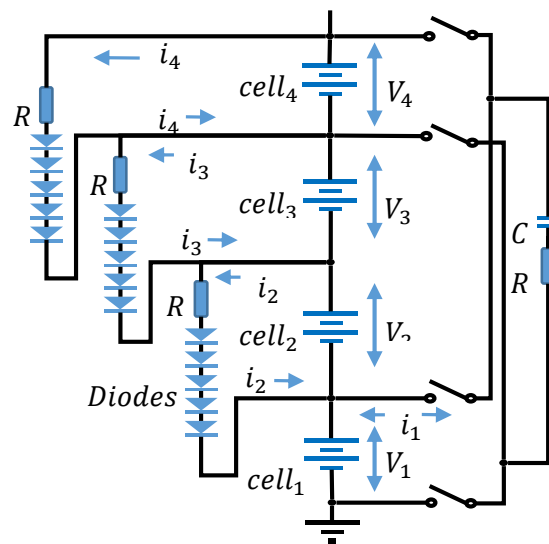


Figure : The schematic of proposed balancing techniques

Reference :

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