

Thermal Management for High-Capacity Large Format Li-ion Batteries

Disclosure Number

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Technology Summary

The present invention comprises an alternative functional design for an Li-ion battery to cool or heat the battery with access to the current collectors inside the cell. The invention takes the advantage of higher thermal conductivity in the in-plane direction of the cell and can provide better temperature controls at the core of the Li-ion cell. The invention allows thicker, higher capacity cells to be made for high C-rate applications and allows manufacturers to alter the cell form factor which is limited in conventional designs because of the concern of overheating. By making the batteries thicker (4-times the current norm) one can manufacture 50-100 Ah cells with temperature regulated at the core of the cell. High capacity cells enabled by the invention can drastically reduce the cost of the overall pack and improve the energy density while reducing the system complexity.

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