

Stable Fluorinated and Alkylated Lithium Malonatoborate Salts for Lithium Ion Battery Applications

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Technology Summary

Stable lithium borate salts were synthesized and tested for application in lithium ion batteries. Without using any additives, these new salts are not only compatible with 4.0V cathodes such as LiCoO_2 and LiMn_2O_4 etc. but also more importantly compatible with 5.0V cathode, $\text{LiNi}_0.5\text{Mn}_1.5\text{O}_4$ and graphite anode, which could enable true practical 5.0 V lithium ion batteries. These new salts show good cycling performance and rate capability and thus are very promising candidates for practical applications in lithium ion batteries and energy storage.

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