

Improved High-Voltage Performance of Graphite || $\text{LiNi}_{0.6}\text{Co}_{0.2}\text{Mn}_{0.2}\text{O}_2$ Lithium-ion Battery
Using Designed Electrolyte

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As the lithium-ion battery (LIB) market for electric vehicles and energy storage systems is rapidly growing, upcoming challenge is to charge faster the LIB than ever. Thus, battery chemistry and reaction kinetics are being evolved toward the development of quickly charged LIBs. In the LIB electrolyte perspective, carbonate-based liquid electrolyte has multiple limitations in attaining high rate performance, due to the limited ionic conductivity and viscosity, low thermal stability. To overcome those limitations, new electrolyte systems (e.g., highly concentrated salt, aqueous system, etc.) have been reported. Herein, we present the improved rate capability and cycling performance of nickel rich-based lithium cell with our newly designed electrolytes. We are going to discuss electrode-electrolyte interface chemistry and its correlation to performance in this meeting.

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