

Novel Nitride-Modified Multielectron Conversion Electrode Materials for Lithium Ion Batteries

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Technology Summary

There is an urgent need for new electrochemical cell chemistries to achieve increased electrical energy storage capacity and rate capability for future energy storage needs, yet few viable new cathode materials have emerged. Modified active $MM'F_3 \cdot xNy$ cathode materials, prepared through chemical treatment and through physical vapor deposition, will exhibit enhanced conductivity of the cathode. In this way the modification will improve capacity retention with high rate capability, will enhance surface intercalation at higher voltages, and reduce cell polarization and interparticle resistance. Similarly, modified products formed during discharge enhance ionic conductivity.

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