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Study of Li-Rich Layered Cathode Materials for High-Energy Li-ion Batteries

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Abstract : The high-energy-density Li-rich layered materials are promising cathode materials for the next-generation high-performance lithium-ion batteries. They have attracted a lot of attentions due mainly to their high reversible capacity of more than 250 mAh•g-1 at low charge-discharge current. However several drawbacks still hinder their applications, such as voltage decay caused by an undesired phase transformation during cycling and poor rate capability. To conquer these issues, the authors applied F modification methods on the pristine Li1.2Mn0.54Ni0.13Co0.13O2 to enhance its electrochemical performance.

Keywords : Li-ion battery, Li-rich layered cathode material, phase transformation, cycling stability, rate capability
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