Surface Modification of $\text{Li}_{1.2}\text{Mn}_{0.6}\text{Ni}_{0.2}\text{O}_2$ with Electronic Conducting Polypyrrole

Hao Wu, Honglei Li, Puheng Yang, Yalan Xing*, Shichao Zhang*

School of Materials Science and Engineering, Beihang University, Beijing 100191, PR China

*E-mail: xingyalan@buaa.edu.cn

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To enhance the initial coulombic efficiency, cyclic stability and electronic conductivity of lithium-rich cathode material $\text{Li}_{1.2}\text{Mn}_{0.6}\text{Ni}_{0.2}\text{O}_2$, surface modification is carried out by a facile chemical oxidation polymerization method with pyrrole monomer. The comparison between bare and polypyrrole-coated samples on the structure, morphology and electrochemical properties are investigated and analyzed. Despite sacrificed a part of initial capacity, the initial coulombic efficiency, the cyclic stability and electronic conductivity have been improved.

Keywords: Lithium-rich cathode material; Solvothermal method; Electrochemical performance; surface modification; polypyrrole.

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