



TECHNOLOGY

High Voltage Chlorine Doped Cathode

OVERVIEW

Background:

High voltage cathodes are crucial for high energy densities batteries. Due to the intrinsic structural defects, current high voltage cathodes usually cannot reach its theoretical voltage and capacity. Therefore, novel high voltage cathodes and effective methods to improve cathode voltage and capacity are in great need. $\text{Li}_2\text{Fe Mn}_3\text{O}_8$ (LFMO) is one these high voltage cathodes, which is the best candidate for massive fabrications due to its low-cost and low-toxicity. However, its voltage and capacity is much less than theoretical values, which need to be improved for industrial applications.

Innovation:

Researchers at the University of Maryland have developed a method to improve high voltage cathodes by chlorine doping. When compared with conventional doping methods, such as annealing in chlorine gas and sol-gel method, the proposed method is more time efficient, low cost and controllable due to the modified high voltage material. This method can be applied to any ceramic cathode, as well as other oxide based cathode materials.

APPLICATIONS

Energy storage technologies

ADVANTAGES

Simple fabrication method

Low-cost

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Additional Information

INSTITUTION

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PATENT STATUS

Pending

CATEGORIES

- Materials

- Clean Technology

EXTERNAL RESOURCES

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