

Special Issue on
**Advanced Cathode Materials for High Energy Density
Li-ion Batteries**

CALL FOR PAPERS

Rechargeable batteries play an important role in the storage of electrical energy and in enabling the effective utilization of renewable energy. Among them, Li-ion batteries are the most promising ones to fulfill such needs because of their high energy density and relatively high power density. Despite its achievements in performance and ubiquity in mobile devices, a drastic increase in energy density must be achieved to enable the widespread adoption of electric vehicles. Within the practical operating conditions of today, the current generation of cathode materials does not meet the future energy storage demands of 350 Wh kg^{-1} at the cell level which roughly translates to over 800 Wh kg^{-1} at the positive electrode level established by the US Department of Energy. Recently, a lot of studies focus on high capacity layered oxides, including Ni-rich layered oxides and Li-rich layered oxides which have been considered as promising alternative cathode materials for next generation high energy density Li-ion batteries.

In this special issue, we invite investigators to contribute review articles as well as original research articles that will stimulate a broad discussion and continuous efforts on the high energy density cathode materials for next generation Li-ion batteries. We are particularly interested in articles demonstrating new cathode materials, modification methods, synthesis methods, and new understanding on the operation mechanisms.

Potential topics include but are not limited to the following:

- ▶ Synthesis of high energy density cathode materials, including new synthesis method, new material, and optimum composition
- ▶ Modification of cathode materials, such as surface modification and bulk substitution
- ▶ Fundamental understanding of the cathode materials, for example, degradation mechanism and charge compensation mechanism
- ▶ Novel electrode structure design, double or triple the active material loading of current commercial electrodes, that still retains good performance
- ▶ Theoretical computation method to seek new cathode material with high energy density

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/ijelc/hedli/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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