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AN OVERVIEW OF LITHIUM ION BATTERY AND ITS COMPOSITION

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ABSTRACT

For a wide variety of Li-ion battery electrodes, this overview covers important technical advances and scientific difficulties. Many families of appropriate materials are compared using a periodic table and potential/capacity graphs. Commercial intercalation materials such as lithium cobalt oxide (LCO), lithium nickel cobalt manganese oxide (NCM), lithium nickel cobalt aluminum oxide (NCA), lithium iron phosphate (LFP), lithium titanium oxide (LTO), and others are compared to conversion materials such as alloying anodes in terms of performance, current limitations, and recent breakthroughs (F, Cl, Br, I). There's also talk of new polyanion cathode materials. Each kind of electrode material is discussed in terms of cost, abundance, safety, Li and electron transfer, volumetric expansion, material dissolution, and surface reactions. The study covers and categorizes both basic and particular methods for overcoming current problems.

KEYWORD: *Anodes, Cathodes, Electrodes, Li-Ion Battery.*

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