

## Review of Materials for Electrodes and Electrolytes of Lithium Batteries

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**Abstract.** Lithium-ion batteries are still efficient and reliable energy storage systems and are widely used in portable electronics and electric vehicles. This review describes the types of currently existing lithium batteries, systems with anodes, cathodes and electrolytes made of various materials, and methods for their study. Specifically, it begins with a brief introduction to the principles of lithium-ion batteries operation and cell structure, followed by an overview of battery research methods. Particular attention is paid to the use of nanosized particles for the modification of electrodes and electrolytes, as well as the copolymerization of individual polymers of the gel-polymer electrolyte. The review analyzes possible future developments and prospects for post-lithium batteries.

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