A Review on Materials for Flame Retarding and Improving the Thermal Stability of Lithium Ion Batteries

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Lithium-ion batteries (LIBs), featured by high energy density, high power density, excellent cycle performance and environmental friendliness, are widely used in electric equipment, electric vehicles and energy storage. However, accidents related to fires and explosions of LIBs occur frequently worldwide, some have caused serious threats to human life and health. The safety of LIBs is an extremely important and urgent research topic at present. This article aims to review recent key progresses in materials adopted for flame retarding and improving the thermal stability of LIBs from the external and internal parts, and inspire further improvement of various kinds of materials and strategies to improve LIBs safety, especially for emerging LIBs applications in large-scale energy storage fields.

Keywords: Lithium ion battery; Flame-retardant; Thermal stability

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