

Special Issue

Battery Safety and Fire Prevention in Electric Vehicles

Message from the Guest Editors

The rapid growth of electric vehicles (EVs) has brought increased attention to the critical issues of battery safety and fire prevention. Battery safety concerns, often referred to as "thermal runaway", have impeded the widespread implementation of energy-dense lithium-ion batteries (LIBs) in EVs and energy storage stations. The development of ultrahigh-nickel layered oxide cathode (e.g. NCM, NCA) and silicon-based anode (SiC) materials has significantly increased the energy density of LIBs. The selection of battery material chemistries plays a crucial role in determining the thermal stability of batteries. This Special Issue aims to address challenges and advancements in ensuring the safe operation of EV batteries.

Potential topics:

Thermal failure mechanisms of lithium/sodium-ion batteries

Advanced materials for thermal stability and fire prevention

Battery safety enhancement at the material and cell levels

Advanced battery thermal management technology

Modeling and the reduced order method for battery thermal runaway

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Take the opportunity to publish your original scientific work or a review paper concerning battery materials, battery technology or battery application within this new open access journal. Along with material science, the journal also addresses engineering and multidisciplinary research topics, such as cell and system design or storage system integration. Publishing proffers visibility for the benefit of other experts and facilitates discussion of the research results within the field. You are invited to publish your work, read published papers and to participate in topical discussions.

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