Special Issue

Fast-Charging Lithium Batteries: Challenges, Progress and Future

Message from the Guest Editors

Compared to traditional combustion-engine-powered vehicles that can be refilled in 5 min, electric vehicles currently take much longer to refill. To meet the expectations of consumers, fast-charging lithium batteries are considered a key challenge for the widespread adoption of electric vehicles. Many obstacles such as extensive energy decay and safety issues hinder the fast-charging target of charging to 80% state of charge within 10–15 min. This Special Issue is looking for contributions to help us understand the mechanism and obstacles of fast charging and gather innovative studies on novel materials and technologies to improve fast-charging capability of batteries.
Potential topics include but not are limited to:

- Li-ion batteries, Li metal batteries, Li-S, Li-O, etc.
- Material development including anode, cathode, electrolyte, etc.
- Electrode and cell design and fabrication.
- Cell performance testing including cycle life and thermal safety investigation.
- Characterization methodology investigation.
- Modeling and machine learning to understand and predict cell performance.

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Message from the Editor-in-Chief

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.

Editor-in-Chief

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