Special Issue

Discovery and Optimization of Advanced Cathode and Separator

Message from the Guest Editors

The promotion of energy density, cycling performance and saftey are the future orentations in the field of energy storage. To overcome these constraints, “beyond Li-ion” electrochemistries have been viewed as promising candidates for future large-scale energy applications, in particualr as metal-S batteries, metal–gas batteries and solid-state batteries. As is known, various cathode materials developments provide alternative pathways with different energy storage mechanisms to promote battery performance. Up to now, the discovery and optimization of battery cathodes and separators have accelerated developments in energy storage and conversion devices. Therefore, it is necessary to summarize the related background knowledge and to inspire advanced cathode and separator explorations as well as understand their mechanisms so as to progress towards next-generation electrochemical energy storage devices. Recent studies in the fields of cathode and polymer electrolytes for lithium-metal batteries, metal-S batteries and metal-gas batteries are all appreciated.

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