

Special Issue

Interfacial Regulation for Lithium-Sulfur Batteries

Message from the Guest Editors

Lithium-sulfur batteries (LSBs) are considered one of the most promising candidates for the next generation of energy-storage systems due to their high theoretical and achievable energy density and the natural abundance of sulfur. However, their reversible charge-discharge process encounters challenge from both the anode and cathode. For example, dendritic and dead Li-metal arises from the imperfect interphases between electrolyte and electrode, resulting in low lithium utilization and safety concerns; The dissolution of polysulfides and parasitic shuttling from cathode to anode lead to the deposition of Insulating discharge product Li₂S on the surface of cathode and anode, causing severe electrode passivation and poor cycling performance. These two issues originate from the imperfection of interphases between electrode and electrode. Therefore, interfacial LS regulation plays a crucial role in. This Special Issue will focus on the current status of LSBs as well as new material synthesis and battery assembly strategies to resolve the defective interphases between electrolyte and electrode.

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