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Special Issue Reprint

Electrolyte and Electrode Design for Next-Generation Rechargeable Batteries

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The design of suitable electrolytes and electrodes is key to the success of emerging battery systems. Electrode materials play an important role in the energy density, power density, and lifecycle of batteries, and the design of reasonable electrode materials is essential to promote the development of novel battery technologies. As the only component that interfaces with every other component in the batteries, the electrolyte must satisfy several criteria simultaneously, including rapid ion and mass transportation, effective electron insulation, and electrochemical inertness. The associated electrolyte–electrode interfacing chemistry is the essence of electrolyte engineering, dictating the power, energy, and reversibility of the battery during its entire service life. This Special Issue cover the key topics in next-generation battery technologies, including electrolytes, electrodes, and interphases.

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