

Special Issue

All-Solid-State Metal–Air Batteries

Message from the Guest Editor

Solid-state metal–air batteries are a novel type of high-energy density batteries, which have the potential to offer a significantly higher energy density compared to that of the conventional lithium-ion batteries, making them attractive for various applications, including electric vehicles and grid energy storage. Additionally, solid-state metal–air batteries are more environmentally friendly and safer than traditional liquid electrolyte batteries, as they eliminate the risk of electrolyte leakage and flammability. However, the challenges and issues associated with solid-state metal–air batteries include the need to develop high-performance solid electrolytes for the efficient conduction of lithium ions at room temperature, as well as designing stable and efficient electrode materials. Additionally, the development of effective catalysts for oxygen reduction and evolution reactions is crucial to enhance their overall efficiency. Furthermore, issues related to the mechanical stability and long-term cycling performance of solid-state metal–air batteries need to be addressed to ensure their practical viability.

Guest Editor

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