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Research Focuses on Zinc-Air Batteries

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Message from the Guest Editors

Numerous studies concerning the development of Zn anodes, air cathodes, electrolytes and separators have reported ameliorating their limited efficiency, durability, and cycle life. In particular, the multistep processes and sluggish kinetics of the oxygen reduction reaction (ORR) and oxygen evolution reaction (OER) during the charging/discharging process present substantial obstacles to superior ZAB performance. Accordingly, diverse materials have been designed to improve ORR/OER electrocatalysis at the heterogeneous interface. Moreover, portable and wearable devices necessitate advances in flexible ZABs with pliable electrodes and solid-state electrolytes.

Despite current efforts, battery deficiencies remain, which must be overcome before widespread application can be realized. Purposive structural and componential regulation of battery configuration, combining techniques such as computational simulation and high-throughput screening and ZAB integration, are required. This Special Issue aims to provide an overview of the latest research relating to ZABs, including design of advanced oxygen electrocatalyst material, electrocatalysis mechanisms, solid-state electrolytes, etc.

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Message from the Editor-in-Chief

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