

Special Issue

Future of Potassium Super Oxide Batteries

Message from the Guest Editors

Lithium and sodium have been significantly used in the energy storage system after the development of energy generation and storage concept. The concept of lithium-oxygen (Li-O₂) and sodium-oxygen (Na-O₂) batteries based on lightweight oxygen (O₂) cathode evolved during the attempts for further improving the battery energy density and reducing the cathode cost without the usage of transition metal element. Though Li-O₂ occupy the major space in the area of research of the alkali metal-O₂ battery system, researchers are working hard within this decade to eliminate the drawbacks of the Li-O₂ battery through the development of potassium (K)-O₂ battery, which was first invented by Dr. Yiyang Wu from the Ohio State University in 2013.

There is a wide room for the study of the K-O₂ battery system with perspectives on the future development of the long-lasting K metal anode, the functional electrolyte, and the porous gas diffusion cathode materials for enhancement of lifespan, energy output and power capability.

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