

# Development of Lightweight, Compact, High-Capacity Batteries

**R&D Project Title :** Development of Lithium-Air Secondary Batteries  
Characterized by Lightweight, Compact, and High Capacity

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## Summary :

Lithium-air batteries offer the highest theoretical gravimetric energy density among various types of secondary batteries, providing the potential for lightweight, compact, and high-capacity storage. However, current challenges include the lack of stable battery materials that are tolerant against the reactive oxygen species generated during battery reactions, as well as the large charging overvoltage caused by the poor decomposability of discharge products. This study proposes a fundamental solution based on the new concept of “discharge product engineering”. Through deep collaborations between materials informatics, advanced analytical chemistry, and experimental battery chemistry, we aim to achieve both a high gravimetric energy density and favorable cycle performance.

