



Rechargeable Metal–Air Batteries: Status and Prospects

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Deadline for manuscript
submissions:

26 November 2024

Message from the Guest Editor

Dear Colleagues,

Metal–air batteries are characterized by high thermodynamic energy densities, convenient operation using ambient air at the positive electrode, and design flexibility for a variety of applications (ranging from micro-scale to large-scale stationary energy storage systems). The variety of metals that could be utilized (including Al, Fe, Li, Mg, Na, and Zn) provides a very rich research and development space for batteries.

Topics of special interest include, but are not limited to, the following:

- Bifunctional electrocatalysis of the oxygen reduction and evolution reactions using cost-effective catalysts;
- Advancements in reversible oxygen electrode engineering and design with emphasis on long-term durability enhancement;
- Electrolytes: aqueous or non-aqueous, and separators for diverse metal–air batteries;
- The electrochemistry of the rechargeable metal electrode: approaches for minimizing parasitic reactions, passivation, and/or dendrite formation;
- Metal slurry-air flow batteries;
- Cell and/or stack modeling and experimental validation;
- Accelerated degradation studies;
- Techno-economic analysis and energy storage system integration.





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Message from the Editor-in-Chief

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Journal Rank: JCR - Q2 (*Electrochemistry*) / CiteScore - Q2 (*Electrochemistry*)

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