



## Rechargeable Metal–Air Batteries: Status and Prospects

Guest Editor:

**Prof. Dr. Elod Gyenge**

Department of Chemical and  
Biological Engineering, The  
University of British Columbia,  
Vancouver, BC V6T 1Z4, Canada

Deadline for manuscript  
submissions:

**closed (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.





an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Karim Zaghib

Department of Chemical and  
Materials Engineering, Concordia  
University, Montréal, QC H3G  
1M8, Canada

## Message from the Editor-in-Chief

Take the opportunity to publish your original scientific work or a review paper concerning battery materials, battery technology or battery application within this new open access journal. Along with material science, the journal also addresses engineering and multidisciplinary research topics, such as cell and system design or storage system integration. Publishing proffers visibility for the benefit of other experts and facilitates discussion of the research results within the field. You are invited to publish your work, read published papers and to participate in topical discussions.

## Author Benefits

**Open Access:**— free for readers, with [article processing charges \(APC\)](#) paid by authors or their institutions.

**High Visibility:** indexed within [Scopus](#), [SCIE \(Web of Science\)](#), [Inspec](#), [Ei Compendex](#), [CAPlus / SciFinder](#), and [other databases](#).

**Journal Rank:** JCR - Q2 (Electrochemistry) / CiteScore - Q1 (Electrical and Electronic Engineering)

## Contact Us

---

Batteries Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/batteries](http://mdpi.com/journal/batteries)  
[batteries@mdpi.com](mailto:batteries@mdpi.com)  
[X@batteriesmdpi](https://twitter.com/batteriesmdpi)