



## Challenges of Batteries in the Post Li-Ion Era

Guest Editor:

**Prof. Dr. Vito Di Noto**

Section of Chemistry for  
Technology, Department of  
Industrial Engineering, University  
of Padua, Via Marzolo 9, 35131  
Padova, Italy

Deadline for manuscript  
submissions:

**closed (30 September 2022)**

### Message from the Guest Editor

Dear Colleagues,

Lithium-ion batteries (LIBs) are the most efficient systems for energy conversion and storage available on the market today. At present, they are the solution of choice in portable electronics and automotive applications. Unfortunately, LIBs suffer from several drawbacks such as intrinsic limitations in energy density; high costs of raw materials (Li and Co) due to their low abundance in the Earth's crust; and low safety due to the reactivity and volatility of battery components. In this scenario, an urgent need exists for (i) novel systems employing innovative chemistries; and (ii) advanced lithium batteries. The former includes (i) cheap, abundant, and, preferentially, multivalent metals; and (ii) anionic transport media based on F<sup>-</sup> and Cl<sup>-</sup>. The latter comprises novel concepts, materials, and designs for lithium chemistry, e.g., lithium-air; lithium-sulfur; silicon or lithium metal anode; high-voltage cathodes; and all solid-state batteries. This Special Issue of *Batteries* will cover all the above topics, and also fundamental and applied aspects of polymeric and ceramic materials that can be used for the ionic transport of the mentioned ions.





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 - Q2 (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](#)