

## Special Issue

# Design of Next-Generation Batteries: Materials, Cell Performance and Production Processes

### Message from the Guest Editor

Recent advances in battery research have been driven by innovations in materials, cell architectures, and scalable manufacturing methods. As the demand for high-energy-density, fast-charging, safe, and cost-effective energy storage grows, researchers worldwide are exploring novel chemistries (e.g., solid-state, Li-S, Na-ion, Mg-ion), advanced electrode/electrolyte materials, and optimized production techniques. This special issue "Design of Next-Generation Batteries: Materials, Cell Performance and Production Processes" in *Processes* seeks high-quality original research and review articles that address the latest breakthroughs in battery materials, performance optimization, and manufacturing processes. We warmly invite original research articles, comprehensive reviews, and insightful perspective pieces addressing, but not limited to, the following areas:

- Advanced Electrode Materials and Architectures
- Next-Generation Electrolytes and Solid Electrolyte Interfaces (SEI/CEI)
- Cell Performance, Durability, and Safety
- Scale-Up and Manufacturing Processes
- Computational Modeling (e.g. DFT)

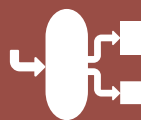
### Guest Editor

Dr. Shivam Kansara

Next-Generation Energy Materials (NEM) Lab, Department of Energy Engineering, Hanyang University, Seoul 04763, Republic of Korea

### Deadline for manuscript submissions

31 January 2026



## Processes

an Open Access Journal  
by MDPI

Impact Factor 2.8  
CiteScore 5.5



[mdpi.com/si/245302](https://mdpi.com/si/245302)

*Processes*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[processes@mdpi.com](mailto:processes@mdpi.com)

[mdpi.com/journal/  
processes](https://mdpi.com/journal/processes)





# Processes

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.8  
CiteScore 5.5



[mdpi.com/journal/  
processes](https://mdpi.com/journal/processes)



## About the Journal

### Message from the Editor-in-Chief

You are invited to contribute either a research article or a comprehensive review for consideration and publication in *Processes* (ISSN 2227-9717). *Processes* is published in open access format – research articles, reviews, and other content are released on the internet immediately after acceptance. The scientific community and the general public have unlimited, free access to the content. As an open access journal, *Processes* is supported by the authors and their institutes through the payment of article processing charges (APCs) for accepted papers. We would be pleased to welcome you as one of our authors.

---

### Editor-in-Chief

Prof. Dr. Giancarlo Cravotto

Department of Drug Science and Technology, University of Turin, Via P. Giuria 9, 10125 Turin, Italy

---

### 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), Ei Compendex, Inspec, AGRIS, and other databases.

#### Journal Rank:

CiteScore - Q2 (Chemical Engineering (miscellaneous))