

## Special Issue

# Intelligent Control and Sustainable Optimization of Circular Lithium-Ion Battery Systems

### Message from the Guest Editors

The rapid global expansion of electric mobility and renewable-based power systems has intensified the demand for efficient, safe, and sustainable lithium-ion battery technologies. As these batteries progress through their life cycle—from material extraction and cell design to end-of-life reuse and recycling—environmental, economic, and technological challenges emerge. Ensuring circularity at each stage is essential for reducing resource dependency, minimizing waste, and supporting resilient, low-carbon energy systems. This Special Issue invites original research, reviews, case studies, and technological advancements that explore sustainable and circular solutions for lithium-ion batteries. Topics of interest include eco-efficient battery design, lifecycle assessment, green manufacturing, thermal and health management tools, second-life applications, repurposing strategies, recycling innovations, and digital or AI-driven methods for optimization across the battery value chain. Contributions addressing policy frameworks, supply chain sustainability, and the real-world deployment of battery storage in electric vehicles or stationary systems are also welcome.

---

### Guest Editors

Prof. Dr. Fernanda Corrêa

Department of Electrical Engineering (DAELE), Federal University of Technology—Paraná (UTFPR), Ponta Grossa, PR, Brazil

Prof. Dr. Thiago Antonini Alves

Academic Department of Mechanical Engineering (DAMEC), Federal University of Technology—Paraná (UTFPR), Ponta Grossa, PR, Brazil

---

### Deadline for manuscript submissions

1 March 2027



Sustainability

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.3  
CiteScore 7.7



[mdpi.com/si/272809](https://mdpi.com/si/272809)

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

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





## Sustainability

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.3  
CiteScore 7.7



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



## About the Journal

### Message from the Editor-in-Chief

I encourage you to contribute a research or comprehensive review article for consideration for publication in Sustainability, an international open access journal which provides an advanced forum for research findings in areas related to sustainability and sustainable development. The journal publishes original research articles, reviews, conference proceedings (peer reviewed full articles) and communications. I am confident you will find the journal contributes to enhancing understanding of sustainability and fostering initiatives and applications of sustainability-based measures and activities.

---

### Editor-in-Chief

Prof. Dr. Steve W. Lyon

School of Environment and Natural Resources, Ohio State University,  
Columbus, OH 43210, USA

---

### Author Benefits

#### Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

#### High Visibility:

indexed within Scopus, SCIE and SSCI (Web of Science), GEOBASE, GeoRef, Inspec, RePEc, CAPlus / SciFinder, and other databases.

#### Journal Rank:

JCR - Q2 (Environmental Studies) / CiteScore - Q1  
(Geography, Planning and Development)