

## Special Issue

# Membrane Materials and Processes for Advanced Electrochemical Energy Systems

### Message from the Guest Editor

At present, global energy demand is increasing at an unsustainable rate, with an estimated rise by 48% between 2012 and 2040. Global energy-related CO<sub>2</sub> emissions are expected to increase by 46% within the same time interval. Therefore, the development of clean energy technologies able to alleviate the skyrocketing energy demand and mitigate the rising CO<sub>2</sub> emissions is urgently required. Membrane materials and processes now play a crucial role, among others, for the design and development of novel electrochemical technologies for energy conversion and storage systems. In particular, ion exchange membrane materials have been used as a key component to construct highly efficient and economically affordable energy technologies. This Special Issue will therefore aim at a systematic analysis of the existing and new ion-exchange membranes and processes, opportunities, and challenges for developing advanced electrochemical energy conversion and storage technologies including reverse electrodialysis, water electrolysis and flow batteries, and related processes. Papers related to the aforementioned electrochemical energy systems towards establishing a sustainable society are welcome.

---

### Guest Editor

Dr. Ramato Ashu Tufa

Department of Energy Conversion and Storage, Technical University of Denmark, 2800 Kgs. Lyngby, Denmark

---

### Deadline for manuscript submissions

closed (31 August 2021)



Sustainability

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.3  
CiteScore 7.7



[mdpi.com/si/42558](https://mdpi.com/si/42558)

*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)