

Special Issue

Sustainable Development in Functional Biomaterials: Coating Methods and Optimization

Message from the Guest Editors

This Special Issue focuses on the design and fabrication of functional biomaterials, as well as the optimization of their coating processes. Over the past two decades, there has been a growing demand for eco-friendly, non-toxic, biocompatible and biodegradable materials. Biopolymers have emerged due to their biodegradability and unique properties. The application of polymeric coatings to natural and synthetic biopolymer substrates can enhance properties such as antibacterial activity, gas barrier performance, mechanical strength, and thermal stability, while also mitigating material degradation. However, challenges such as coating defects, coating non-uniformity, nanoparticle agglomeration, weak interlayer adhesion, and delamination can lead to inconsistencies in material properties. Consequently, optimization strategies, including green manufacturing, are essential in the refinement of process parameters and the minimization of material waste. Additionally, the digitization of process parameters could ensure the precise delineation of optimal coating conditions, paving the way for material innovations, improved product quality, and technological breakthroughs.

Guest Editors

Dr. Samuel Fagbemi

Dr. Julia L. Shamshina

Dr. Anuja Tripathi

Deadline for manuscript submissions

31 December 2025



Sustainability

an Open Access Journal
by MDPI

Impact Factor 3.3
CiteScore 7.7



mdpi.com/si/225392

Sustainability
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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. *Sustainability* publishes original research articles, review 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. Marc A. Rosen

Faculty of Engineering and Applied Science, University of Ontario
Institute of Technology, Oshawa, ON L1G 0C5, Canada

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, CAPIus / SciFinder, and other databases.

Journal Rank:

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