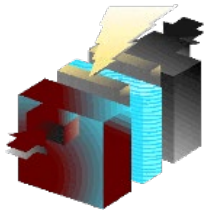

Journal of New Materials for Electrochemical Systems

Special issue, June 2027

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AIMS AND SCOPE or INTRODUCTION or Description

This special issue focuses on the integration of environmental information science with the development of new materials for electrochemical systems. It highlights the role of

systematic data collection, analysis, and interpretation in advancing sustainable electrochemical technologies. By combining environmental data with materials science, electrochemical engineering, and computational approaches, the issue aims to transform raw data into actionable knowledge for improving the performance, durability, and sustainability of electrochemical systems.

The discipline integrates tools such as modeling, data analytics, and computational methods with experimental and analytical studies of materials. It emphasizes understanding the interaction between environmental conditions and electrochemical systems, including fuel cells, batteries, supercapacitors, and hydrogen production technologies. Advanced approaches, including machine learning, geospatial analysis, and environmental monitoring, support the optimization and innovation of materials used in electrochemical applications.

Furthermore, this special issue promotes the development of knowledge-based strategies for designing efficient and environmentally resilient electrochemical systems. It addresses challenges related to materials durability, system integration, and sustainability under changing environmental conditions. The transformation of environmental and experimental data into reliable knowledge supports evidence-based decision-making, enhances system performance, and contributes to the commercialization of advanced electrochemical technologies.

This work reflects the importance of integrating environmental data and advanced materials research to address global energy and sustainability challenges. It aims to provide a platform for interdisciplinary research that bridges environmental information science and electrochemical systems, making recent developments accessible to researchers, industry professionals, and policymakers.

LIST OF TOPICS:

· Advanced materials for fuel cells and biofuel cells
· Novel materials for primary and secondary batteries
· Materials and design approaches for electrochemical supercapacitors
· Hydrogen production and storage using advanced electrochemical materials
· Bioelectrochemistry and its environmental and energy applications
· Electrochemical nanotechnology for enhanced system performance
· Sensors and biosensors for environmental and electrochemical monitoring
· Photoelectrochemical systems for energy conversion
· Elaboration, synthesis, and characterization of new electrochemical materials
· Materials durability and degradation under environmental conditions
· Systems integration of electrochemical technologies with renewable energy sources
· Data-driven approaches for optimizing electrochemical systems
· Computational and modeling techniques for predicting material behavior
· Integration of environmental data in electrochemical system design and analysis
· Machine learning and AI applications in electrochemical materials research
· Sustainability assessment and lifecycle analysis of electrochemical systems
· Commercial and industrial aspects of new materials for electrochemical systems

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IMPORTANT DATES:

- Manuscript submissions due:30.10.2026
- First round of reviews completed: 28.12.2026
- Revised manuscripts due: 29.02.2027
- Final manuscripts due:29.05.2027