

Special Issue on
**Carbon-Based Nanomaterials for Electrochemical Energy
Storage and Conversion**

CALL FOR PAPERS

Development of efficient and reliable electrochemical energy storage and conversion devices is urgent to meet today's societal and environmental demands, which have become more and more relying on sustainable, clean, and renewable energy resources. Among a variety of nanoscale materials, carbon-based nanomaterials are increasingly capturing the attention of the research community due to their unique properties such as low density, high surface area, controllable pore size, chemical stability, and superior electronical and thermal conductivity. Usually, these nanomaterials are composed mostly of carbon and few oxygen, hydrogen, and nitrogen elements or other elements. Extensive research efforts are being made to prepare and utilize these carbon-based nanomaterials for vast applications, such as batteries, supercapacitors, fuel cells, and hydrogen generation and storage. Although a variety of carbon-based nanomaterials have been fabricated to date such as activated carbon, carbon aerogel, carbon nanotubes, carbon nanofibers, and graphene, their electrochemical performance cannot yet satisfactorily meet the commercial requirements of electrochemical energy storage and conversion technologies. Taking these considerations into account, this special issue focuses the attention on the state-of-the-art methods for preparing advanced carbon-based nanomaterials, as well as their energy-related applications.

Herein, we invite investigators to contribute review articles and original research papers from leading research groups with shared interests in carbon-based nanomaterials and electrochemical energy storage and conversion technologies. We believe such special issue is of great interest to the readership of this journal.

Potential topics include but are not limited to the following:

- ▶ Recent breakthroughs and future perspectives of carbon-based nanomaterials in batteries
- ▶ Synthesis, modification, and characterization of carbon-based nanomaterials for electrochemical applications
- ▶ Energy storage and conversion devices (i.e., batteries, supercapacitors, and solar cells)
- ▶ Structural and electrochemical characterizations
- ▶ Theoretical study of relations between nanomaterials and electrochemical performance
- ▶ Fundamental understanding of carbon-based nanomaterials as electrodes

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/ijelc/neesc/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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