

# Tentative Outline

## Special Thematic Issue for Current Nanoscience

**Advanced Functional Nanomaterials for Electrochemical Energy Storage and Conversion: Mechanism, Applications and Future prospects**

**Guest Editors: Dr. Xinjuan Liu**

### Aims & Scope:

The increasing demands for energy and growing concerns about air pollution and global warming have called for intense research on energy conversion from alternative energy sources. Sustainable and renewable energy resources are being intensively pursued owing to the diminishing supply of fossil fuels and climate change. Electrochemical energy conversion and storage systems such as rechargeable batteries (Lithium/sodium ion batteries), electrochemical capacitors (also called supercapacitors), solar cells, and photocatalysis are considered as a promising method for effective and practical technologies to solve the above problems. Recently, advanced nanomaterials have attracted considerable attention due to their superior properties, such as large surface area, favorable transport properties, altered physical properties, and confinement effects as well as their wide potential in environmental and energy related applications.

This themed issue invites contributions in the field of advanced nanomaterials for renewable energy conversion and storage, including rechargeable batteries, electrochemical capacitors, solar cells, and photocatalysis from experimental/theoretical/calculational perspective.

### Subtopics:

The subtopics to be covered within this issue are listed below:

- Conductive polymer-based anode nanomaterials for microbial fuel cells: a review (review)
- Transition-Metal Carbides (MXenes) for photocatalytic reduction of CO<sub>2</sub> (review)
- Recent advances of bi-mass derived electrode materials for capacitive deionization (review)
- Recent progress on modified attapulgite clay nanomaterials for environmental application (review)
- Application of all inorganic perovskite quantum dots in photovoltaics (review)
- A Review of Sb-based Nanocomposites as Electrode Materials for Electrochemical Energy Storage (review)

### Schedule:

- ✧ **Tentative Manuscript submission deadline: June 30, 2020**
- ✧ **Tentative Peer Review Due: July 30, 2020**
- ✧ **Tentative Revision Due: August 30, 2020**
- ✧ **Tentative Final manuscripts due: September 30, 2020**

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