

## Special Issue on **Multifunctional Materials for Electrochemical and Solar-Based Green Energy Technologies**

# CALL FOR PAPERS

Due to the increase in global energy demand and environmental concerns over the use of fossil fuels, there is more than ever a need of developing efficient, sustainable, and cost-effective materials for green energy technologies. In recent years, much attention has been given to environmentally friendly materials performing more than one type of functions in a system called multifunctional materials. Materials of this kind have tremendous potential to impact the system efficiency by reducing the size, cost, energy consumption, and complexity while improving the performance and versatility. With the advancement of analysis techniques, research about the synthesis, characterization, and application of multifunctional materials has been escalated significantly. The properties of these materials depend on various factors such as size, shape, and surface morphology. Advanced surface imaging and characterization techniques can be used to get insight into the structure-properties relationship that determines the potential end applications of these materials. Understanding the fundamental properties of multifunctional materials is crucial for the design and manufacturing of devices for green energy technologies.

The purpose of this special issue is to publish high quality research articles and review articles based on the scientific novelty and originality associated with the development of multifunctional materials for green energy applications.

Potential topics include but are not limited to the following:

- ▶ Multifunctional materials and their morphological properties
- ▶ Optical, electronic, and photoelectrochemical studies of the materials for energy applications
- ▶ Photocatalysis and photoelectrocatalysis
- ▶ Multifunctional materials for electrochemical energy storage systems, for example, batteries and capacitors
- ▶ Catalysts and membranes for acidic and alkaline fuel cells and electrolyzers
- ▶ Materials for reduction of CO<sub>2</sub> to produce hydrocarbon fuels
- ▶ Semiconductors, conducting polymers, and composite materials for green energy applications
- ▶ Materials for UV/Visible/NIR-based photocatalysis and photovoltaics
- ▶ Biofuels and biofuel cells
- ▶ Other materials such as electrolytes, catalysts, and electrodes with outstanding properties used in green energy technologies

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

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

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