



Journal of Engineering

Special Issue on

**Advanced Materials: A Step to Sustainable Energy  
Future**

# CALL FOR PAPERS

To sustain rapid growth in technology, an efficient use of energy is a key aspect. Rapid depletion of carbon-based fossil fuels and increased environmental pollution makes it inevitable to shift from nonrenewable fossil fuels to potent, dependable, and renewable energy sources for sustainable development. Across the globe, researchers from both academic and industrial institutions are trying hard to develop technologies to make use of different kinds of advanced materials for clean energy. Solid state hydrogen storage in advanced materials such as carbon nanotubes (CNTs), metallic organic frameworks (MOFs), covalent organic frameworks (COFs), metal hydrides, ionic liquids, and zeolites is the clean, versatile, and safest renewable energy for the wide range of industrial applications. In parallel, many other various energy storage systems such as thermal, mechanical, electromagnetic, and electrochemical are also in place to strengthen the generation of sustainable energy sources. Metal oxide thin-film-based dye-sensitized solar cells (DSSC) are considered as one of the promising engineering technologies to produce sustainable energy source. Also, new composite blades for turbines utilizing wind are other attractive options to generate renewable energy source. Scientific, technical, and engineering challenges are obvious when switching from a nonrenewable energy source to renewable energy.

The aim of this special issue is to explore scientific, technical, and engineering challenges from the nonrenewable energy source to renewable energy. We invite all the researchers globally to contribute original research articles as well as review articles to encapsulate the need for renewable energy using advanced materials for the betterment of future and modern industrial processes.

Potential topics include, but are not limited to:

- ▶ Photovoltaic conversion of the solar energy to clean renewable energy
- ▶ Energy storage devices such as Li-ion batteries and capacitors
- ▶ Heterogeneous catalysis
- ▶ Geothermal power
- ▶ Nuclear energy
- ▶ Biofuels
- ▶ Hydrogen and fuel cells
- ▶ Nanostructured materials
- ▶ System design and engineering
- ▶ Materials used for solar cells, fuel cells, photovoltaic cells, and so forth

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/je/chemical.engineering/msef/>.

## Lead Guest Editor

Sami ullah Rather, King Abdulaziz University, Jeddah, Saudi Arabia  
*rathersami@kau.edu.sa*

## Guest Editors

Faheem A. Sheikh, Myongji University, Gyeonggi-do, Republic of Korea  
*faheem99in@yahoo.com*

Lachezar Angelov Petrov, Bulgarian Academy of Sciences, Sofia, Bulgaria  
*petrov@ic.bas.bg*

Arul Manuel Stephan, Central Electrochemical Research Institute, Karaikudi, India  
*amstephan@cecri.res.in*

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