

Special Issue on
Nanostructured Materials: Step to Sustainable Energy Future

CALL FOR PAPERS

To sustain rapid growth of 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 nanomaterials materials for clean energy. Solid state hydrogen storage in nanoporous materials such as carbon nanotubes (CNTs), metallic organic frameworks (MOFs), covalent organic frameworks (COFs), 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 blade for turbines utilizing wind is another attractive option to generate renewable energy source. Scientific, technical, and engineering challenges are obvious 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 sustainable energy using nanostructured materials for the betterment of future and modern industrial processes.

Potential topics include but are not limited to the following:

- ▶ Photovoltaic conversion of the solar energy to clean renewable energy
- ▶ Energy storage devices such as Li-ion batteries and capacitor
- ▶ Hydrogen and fuel cells
- ▶ System design and engineering
- ▶ Hydrogen storage
- ▶ CO₂ capture
- ▶ Catalysts
- ▶ Batteries
- ▶ Energy conversion and storage

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First Round of Reviews

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