

Special Issue on
**Nanostructure Materials as a Promising Route for
Efficient Renewable Energy Production, Storage, and
Conversion**

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The expected energy crisis has forced the world to endeavor to find a clean, renewable source of energy as opposed to consumable fossil fuels; therefore, there are intensive efforts to use solar, wind, and hydrogen energy. However, the production, storage, and conversion of these kinds of energy sources require efficient materials to facilitate their rapid commercialization. Nanomaterials have received intensive scientific interest for various applications due to their outstanding chemical, physical, mechanical, electrical, and electronic properties. Hence, the different classes of nanoscale materials (0D, 1D, and 2D) and their hybrid nanocomposites have been used widely in energy related applications such as production, storage, and conversion. Thus, there is progressive research using inorganic, organic, and hybrid nanostructure materials based on graphene sheets, carbon nanotubes, inorganic nanoparticles, inorganic nanotubes, quantum dots, semiconductors, and conducting polymers nanostructure (nanofibers, nanoparticles, and nanocoating) for renewable energy production, storage, and conversion.

This special issue welcomes original research papers and review articles regarding new research trends for harnessing the above-mentioned nanomaterials for renewable energy production, conversion, and storage.

Potential topics include but are not limited to the following:

- ▶ Inorganic solar cells based on nanoparticles
- ▶ Organic solar cells based on functionalized graphene sheets
- ▶ Hybrid solar cells based on polymer nanostructures
- ▶ Fuel cell based graphene sheets and metal nanoparticles
- ▶ Hydrogen production based on zero dimensional nanomaterials
- ▶ Hydrogen storage based MOFs, nanostructures and nanoporous carbon
- ▶ Supercapacitors based on conducting polymer nanostructures
- ▶ Batteries based on carbon nanotubes
- ▶ Hybrid nanocomposites for hydrogen storage
- ▶ Polymer based nanocomposites for supercapacitors

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

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

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