

Reviews in Advanced Sciences and Engineering (RASE)

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A Special Issue on

*“Advanced Nanomaterials for Renewable
Energy Applications”*

Call for Papers

More than six billion people are consuming the remaining fossil fuels at a rapid and accelerating rate. As fossil fuels are depleted, will mankind develop renewable energy quickly enough to assure continuation of a decent standard of living? Building large numbers of renewable energy systems would consume large amounts of fossil fuels, so it is essential that we do not wait until fossil fuels become very scarce and expensive. Mass of research has demonstrated that nanomaterials and nanotechnologies maybe provide one of promising ways toward renewable energy systems, in which improving the energy utilization efficiency and developing new energy are of equal importance.

Basically, the separation and recombination of electron-hole pairs, sometimes in form of exciton, are both fundamental research topics of semiconductors, which correspond to the principles of two kinds of typical optoelectronic devices, e.g. light-emitting devices and solar cells.

Illumination consumes about 20% total energy in the world. Unfortunately, the electricity-to-lighting efficiencies of widely used incandescent and fluorescent lamps are very low. Semiconductor lighting is more promising for energy saving.

Obtaining electricity from the Sun has clear advantages over other renewable energies. So, now a wide range of materials systems used for photovoltaics and the range of innovative materials and device concepts based on nanotechnology were used to maximize efficiency and reduce cost of different solar cells.

This special issue is devoted to the advanced nanomaterials and their applications for renewable energy. The topics of the special issues include but not limited to the following fields:

- ❖ *Engineering of wide band-gap semiconductor materials for energy saving*
- ❖ *Dye-Sensitized Solar Cells*
- ❖ *Advanced Materials for Li-ion battery Applications*

- ❖ *Advanced inorganic materials and concepts for photovoltaics*
- ❖ *Organic photovoltaics: science and technology*
- ❖ *Materials for solar hydrogen via photoelectrochemical production*
- ❖ *Energy transduction at the nanoscale for energy conversion devices and energy storage systems*

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Manuscripts must be prepared according to Journal's guidelines, available at <http://www.aspbs.com/RASE>. Submit your manuscripts in MS word or PDF format directly to the Guest Editors.

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Please notify well in advance for your intension to submit a research paper.

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