



Journal of Nanomaterials

Special Issue on

Nanomaterials for Energy-Efficient Applications

CALL FOR PAPERS

Parallel to energy generation, energy saving is another route to tackle the global energy challenge. Energy-efficient applications include any technology or route that consumes less energy without compromising their functions. They cover a wide range of technologies, for example, solid state lighting based on light-emitting diodes (LED), low-power electronics based on nanoelectronics or spintronics, waste heat recycling based on thermoelectric effect, self-powered devices, and so forth. Nanomaterials open up tremendous opportunities towards energy saving in these fields, as the photon emission, electron transport, spin configuration, and transport, as well as phonon scattering change drastically as the size of the materials shrinking to nanometer scale.

However, the realization of these energy-efficient technologies relies on our ability to synthesize nanomaterials at will and to understand and tailor the properties of the nanomaterials, as well as to integrate the nanomaterials into devices. This special issue solicits these topics together to foster the applications of nanomaterials in the emerging energy research. Experimental, theoretical, or simulation works on nanomaterials or nanostructures that have potential applications in energy-efficient technologies are all welcome.

Potential topics include, but are not limited to:

- ▶ Semiconductor (e.g., II-VI or III-V semiconductor) nanomaterials for LED and solar cells
- ▶ Diluted semiconductor nanomaterials for spintronics
- ▶ Carbon nanotubes and graphene for low power nanoelectronics
- ▶ Thermoelectric nanomaterials or nanocomposites
- ▶ Nanomaterials for photocatalysts, electrocatalysts, and heterogeneous catalysts
- ▶ Nanomaterials for heat management, for example, heat insulation and magnetic refrigerator
- ▶ Nanomaterials for energy-efficient buildings

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Manuscript Due

Friday, 12 September 2014

First Round of Reviews

Friday, 5 December 2014

Publication Date

Friday, 30 January 2015