Journal of Nanomaterials

Special Issue on

Hybrid Nanomaterials and Nanoarchitectures

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Noble metals, magnetic materials, semiconductors, polymers (including biomacromolecules), and π-conjugated small molecules are the principal classes of functional materials to which inorganic dielectrics and nonconjugated self-assembled monolayers often add useful properties or additional functionality. The nanoscience and nanotechnology field is advancing towards the study of hybrid nanomaterials and nanoarchitectures, where two or more functional material classes are brought together to generate unique properties and functionality that is greater than the sum of the individual components. In hybrid nanomaterials, the disparate individual component material classes are either in contact or intimately mixed, whereas in hybrid nanoarchitectures, the individual material components are placed in nanoscale proximity with each other leading to collective, synergistic, and/or quantum effects. We invite authors to submit original research and review articles on the innovative synthesis/in-depth characterization/device applications of hybrid nanomaterials and nanoarchitectures.

As soon as a manuscript has been accepted for publication, the author's version of the manuscript will be made available for download in the Articles in Press section of the journal's website.

Potential topics include, but are not limited to:

- Metal-semiconductor, metal-small molecule, polymer-semiconductor, metal-polymer, semiconductor-small molecule, and other colloidal core-shell nanoparticles
- Nanoscale-blended binary and ternary hybrid films for photovoltaics, photocatalysis, light emission, sensing, and electrical heterojunctions
- Charge transport, charge separation, charge recombination, excitonic, plasmonic, and phononic phenomena in hybrid nanostructures
- Fabrication of hybrid nanoarchitectures by self-assembly, nanolithography, and use of nano- and mesoporous templates and biomimetic approaches
- Characterization of hybrid nanomaterials using scattering and imaging techniques
- Applications of hybrid nanomaterials and nanoarchitectures in energy and/or medicine

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Manuscript Due
Friday, 28 August 2015

First Round of Reviews
Friday, 20 November 2015

Publication Date
Friday, 15 January 2016