



Journal of Nanomaterials

Special Issue on

Ferroic Nanostructures for Energy Applications

CALL FOR PAPERS

Ferroic materials exhibit properties including ferromagnetism, ferroelectricity, ferroelasticity, or rarely the coexistence of multiple order parameters in a single phase resulting in multiferroicity. The properties of such materials in their nanostructured form are known to deviate from their bulk counterparts resulting in fascinating phenomena. Recently, great interest has been devoted to exploiting the usefulness of these properties for applications in areas such as photovoltaics, spintronics, energy storage, and magnetic refrigeration. The goal to achieve energy efficient solution has a two-step approach: (i) to understand and harness the fundamental changes in the ferroic properties arising due to nanostructuring and (ii) to design a cheap and reproducible route to fabricate, synthesize, or deposit such nanostructures allowing mass production in an industrial scale.

In addition to this, the combination of two or more ferroic materials results in the formation of composites which exhibit remarkable properties that are different from their constituent materials. Such nanoengineered composite materials are expected to possess competing physical phenomena which allow one the scope to obtain tunable properties specifically targeted for desired utility. The recent advancements in various chemical and physical growth techniques to fabricate nanostructures have opened several avenues to obtain endless combinations of such composite materials with multiple functionalities. In this special issue, we invite investigators to contribute high quality original research papers and review articles that have not been published before or are currently not under consideration by other journals.

Potential topics include, but are not limited to:

- ▶ Fabrication, characterization, and properties of nanoscale magnetic materials and heterostructures for energy and refrigeration applications
- ▶ Piezoelectric materials for nanogenerators
- ▶ Multiferroic materials for magnetoelectric information storage, photovoltaics, catalysis, and water splitting
- ▶ Micromagnetic simulation

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/jnm/ferr/>.

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First Round of Reviews

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