



Journal of Nanomaterials

Special Issue on

Low-Dimensional Phase Transforming Materials

CALL FOR PAPERS

Due to emerging nanotechnology and nanoscience, there has been an ever-increasing interest in engineering and synthesis of low-dimensional materials. Discovery of carbon nanotubes, graphene, and lately Transition Metal Dichalcogenide (TMD) monolayers attracted the attention of researchers and industry. Recently, new phases and morphologies within these low-dimensional materials gained significant attention as they determine characteristics of the final material.

This special issue focuses on the phase transformation in low-dimensional materials such as nanosheets, nanoribbons, and nanotubes, where the transformation is induced by intrinsic physics, such as surface energy, rather than application of an external stimulus. The goal of the issue is to attract researches enlightening such transformations and the new morphologies and governing physics. We hope to open new routes for tailoring material properties. Here are a few examples that we can refer to:

- ▶ Tuning the properties of 2D TMDs by engineering their phases
- ▶ Forming nanotubes and twin nanotubes from nanosheets
- ▶ Forming enclosed structures via roll-up process
- ▶ Formation of nanodumbbells in J-aggregate for efficient harnessing of solar power
- ▶ Size-dependent phase transformations in low-dimensional materials
- ▶ Surface induced transformations in nanowires and nanoparticles
- ▶ Premelting and interface melting in nanowires and nanoparticles
- ▶ Transformation induced by passivation and surface treatments.

Potential topics include but are not limited to the following:

- ▶ Synthesis, characterization, and application of new phases of low-dimensional materials
- ▶ Understating the relation between kinetics of synthesis process with morphology and properties of as-synthesized phase transforming low-dimensional materials
- ▶ Developing mathematical and computational models for synthesis of phase transforming low-dimensional materials
- ▶ Multiscale and multiphysics computational studies aiming to better understand the phase transformation mechanisms
- ▶ Investigating the effect of interface energy and width on the formation of new phases at lower dimensions
- ▶ Understanding the effect of mechanics and surface tension on stability and formation of new phases at lower scales

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

Lead Guest Editor

Kasra Momeni, Louisiana Tech University, Ruston, USA
kmomeni@latech.edu

Guest Editors

Hamed Attariani, Wright State University, Dayton, USA
hamed.attariani@wright.edu

Yongming Hu, Hubei University, Wuhan, China
huym@hubu.edu.cn

Manuscript Due

Friday, 10 February 2017

First Round of Reviews

Friday, 5 May 2017

Publication Date

Friday, 30 June 2017