



Discrete Dynamics in Nature and Society

Special Issue on Thermodynamic Studies in Multiscale Complex Systems

CALL FOR PAPERS

With the development of cutting-edge technologies on power generation, green energy, aerospace friction, and optoelectronics, the demands of new theories and methodologies to quantitatively study the heat and mass transfer characteristics and transport processes in nonequilibrium multiscale complex systems are becoming more urgent. On one hand, traditional industry and environment require increasingly higher efficiency on energy utilization at macroscale for sustainability. On the other hand, the growth of micro- and nanoscale electromechanical systems (MEMS/NEMS), micro/nanoscale fluids, molecular sensing, biomedical diagnostics, and scanning probe microscopy makes it more important to further explore the energy transport mechanisms at micro- and nanoscale.

The objective of this special issue is to provide a platform to disseminate up-to-date thermodynamic studies in multiscale complex systems. Prospective contributions are welcome from theory, experiment, and numerical simulation to advance the understanding of fundamental mechanisms and foster the application of novel technologies of heat and mass transfers in multiscale complex systems.

Thus, we invite authors to contribute original research articles as well as review articles.

Potential topics include, but are not limited to:

- ▶ Development of novel theories or improvement to existing theories on heat and mass transfers from micro- to macroscales
- ▶ Experimental measurement on thermal and mass transport processes and material thermal properties
- ▶ Numerical investigations of multiscale thermal and mass transport processes
- ▶ Development and application of novel numerical approaches for thermal and mass transfer
- ▶ Heat and mass transfer at the interface between different materials
- ▶ Conjugate, anisotropic, and radiative heat and mass transfers
- ▶ Heat and mass transfers coupled with chemical reactions

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

Lead Guest Editor

Jingchao Zhang, University of Nebraska
Lincoln, Lincoln, USA
zhang@unl.edu

Guest Editors

Qingang Xiong, Oak Ridge National
Laboratory, Oak Ridge, USA
xiongq@ornl.gov

Tao Lu, Beijing University of Chemical
Technology, Beijing, China
lutao@mail.buct.edu.cn

Giulio Lorenzini, University of Parma,
Parma, Italy
giulio.lorenzini@unipr.it

Manuscript Due

Friday, 5 August 2016

First Round of Reviews

Friday, 28 October 2016

Publication Date

Friday, 23 December 2016