Special Issue

Small-System (Nanoscale-Mesoscale) Thermodynamics

Message from the Guest Editor

The study, however, did not attract much attention until near the turn of the last century, when experimental investigations begin to probe small systems because of the advent of modern tools available to manipulate micron-size systems. These systems also exchange heat and work so there is appropriate thermodynamics. There are complications due to quantum effects that may become important (quantum thermodynamics). The concepts of additivity and homogeneity also create hurdles as the size, shape, crystallinity, amorphousness, etc. begin to dominate. The current experimental studies including cluster formation, depression of the melting point and the latent heat, transport, micromachines, molecular motors, living Brownian particles, etc, and theoretical applications include the study of thermodynamic fluctuations, nature of the interplay between energy, heat and work, stochasticity and the second law implications, quantum computers and memory, etc.

Guest Editor

Prof. Dr. Purushottam D. Gujrati

1. Department of Physics, The University of Akron, Akron, OH 44325, USA
2. Department of Polymer Science, The University of Akron, Akron, OH 44325, USA

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Entropy
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
entropy@mdpi.com

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Editor-in-Chief

Prof. Dr. Kevin H. Knuth
Department of Physics, University at Albany, 1400 Washington Avenue, Albany, NY 12222, USA

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