Entropic Control of Soft Materials

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Message from the Guest Editors

Free energy differences have both energetic and entropic contributions. Hence, "entropic forces" or "entropic control" are typically applied to systems in which free energy differences or changes in the potential of mean force are either exclusively based on changes in entropy (where for example there are no interparticle forces) or for which the entropic contributions are comparable to or dominate the energetic contributions to the microstate probabilities. Therefore, from this perspective, we introduce this Special Issue on the entropic control of soft materials, which offers a collection of papers that touch upon the broad range of systems of scientific and technological interest that exploit entropic differences to drive or control their behaviors.

This Special Issue is by no means an exhaustive overview of the rather diverse and rich area of entropic control, but includes contributions from authors across various fields of research that have traditionally exploited and/or utilized entropic control as a means to better understand and/or guide the generation of structures/systems with specific properties of interest.

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Special Issue

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Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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