



Self- and Forced Assembly of Polymer Systems: Experiment, Theory and Simulation

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Message from the Guest Editor

Dear Colleagues,

The assembly of polymers is the phenomena of the organization of polymer chains into two- or three-dimensional structures. Usually, one separates self-assembly/self-ordering and forced assembly. Such structures arise spontaneously due to the change in the external conditions (temperature, ionic strength, pH) through the molecular "recognition" due to non-covalent interactions (electrostatic, hydrophobic) or the formation of hydrogen bonds. As part of the self-assembly, one can also consider the formation of aggregates in block copolymers or the formation of liquid crystals due to the increase in the polymer concentration in the solution. Self-assembly is also observed in living tissues, where it manifests itself in the formation of structures such as double layers and vesicular (bubbly) structures consisting of one or many lipid bimolecular membranes. Self-assembly is used in the construction of functional ("smart") materials, the structure and properties of which depend on changes in external conditions. The forced assembly occurs under the influence of external factors. An example of this is crystallization under the influence of mechanical impacts.





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