



Coarse-Grained Models for Polymers

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Message from the Guest Editors

To cope with the large spectrum of characteristic length and time scales characterizing structure and dynamics in polymers, an approach that is often invoked is coarse-graining. In coarse-graining, collections of atoms are lumped into a new type of entities, referred to as super-atoms or particles or beads or even blobs (implying a cruder representation). Coarse-graining is accompanied by a significant reduction in the number of degrees of freedom, and can be realized by a variety of schemes for mapping atoms or repeat units to larger groups, depending on the properties of interest. Recognizing the importance of coarse-graining in polymer science, this Special Issue of Polymers invites contributions highlighting several recent developments and applications of the method in addressing a variety of systems: entangled polymers, polymers with nonlinear architectures, polymer blends and copolymers, semiconducting conjugated polymers, polymer networks, polymer hydrogels, polymer nanocomposites, ring polymers, polymers for biological or medical applications, and many others.





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