**Computer Simulations
of Liquid Crystals
and Polymers**

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Computer Simulations of Liquid Crystals and Polymers

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Liquid crystals, polymers and polymer liquid crystals are soft condensed matter systems of major technological and scientific interest. An understanding of the macroscopic properties of these complex systems and of their many and interesting peculiarities at the molecular level can nowadays only be attained using computer simulations and statistical mechanical theories. Both in the Liquid Crystal and Polymer fields a considerable amount of simulation work has been done in the last few years with various classes of models at different special resolutions, ranging from atomistic to molecular and coarse-grained lattice models. Each of the two fields has developed its own set of tools and specialized procedures and the book aims to provide a state of the art review of the computer simulation studies of polymers and liquid crystals. This is of great importance in view of a potential cross-fertilization between these connected areas which is particularly apparent for a number of experimental systems like, e.g. polymer liquid crystals and anisotropic gels where the different fields necessarily merge. An effort has been made to assess the possibilities of a coherent description of the themes that have developed independently, and to compare and extend the theoretical and computational techniques put forward in the different areas.

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