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Chapter 16 Many- Body Interactions in Colloidal Suspensions; Chapter 17 Controlling the Fluid- Fluid Mixing- Demixing Phase Transition with Electric Fields; Chapter 18 Dynamic Electric Response of Charged Fibrous Virus (fd) Suspensions: Interactions of Charged Colloidal Rods in AC Electric Fields; Chapter 19 Statistical Thermodynamics of Supercapacitors and Blue Engines
Chapter 20 Cluster Phases in Colloids and ProteinsChapter 21 Estimation of Solvation Electrostatic Free Energy of Biomolecular Systems by Numerical Solution of the Poisson- Boltzmann Equation; Chapter 22 Modeling DNA in Nanopores; Chapter 23 Mean- Field Electrostatics of Stiff Rod- Like Ions; Chapter 24 Physics of Counterion- Mediated Attractions between Double- Stranded DNAs; Chapter 25 Coulomb Interactions between Disordered Charge Distributions; Chapter 26 Short- Range Disorder and Electrostatic Interactions in Macromolecules
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Sommario/riassunto

Recently, there has been a surge of activity to elucidate the behavior of highly charged soft matter and Coulomb fluids in general. Such systems are ubiquitous, especially in biological matter where the length scale and the strength of the interaction between highly charged biomolecules are governed by strong electrostatic effects. Several interesting limits have been discovered in the parameter space of highly charged many-particle Coulomb matter where analytical progress is possible and completely novel and unexpected results have been obtained. One of the challenges in highly charged mat
