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functional approach"; "On the comparison of the different approaches"; "Glasses"; "Modified density functional approach"; "Replica theory approach"; "Mode coupling theory approach"; "Conclusions and outlook"; "Appendix A"; "Colloidal arrested states of matter"; "Introduction"; "The prototype colloidal glass: the hard-sphere glass"; "The role of polydispersity for the HS glass transition"; "Hard spheres plus short-ranged attraction: attractive and repulsive glasses"; "Effective interactions: depletion and its consequences on thermodynamics"; "Dynamics in the presence of short-ranged attraction"; "Soft glasses: the case of star polymers"; "Star polymer solutions"; "Binary mixtures of stars"; "Further exploitation of softness: the asymmetric glass"; "Dynamical features of the star-star multiple glasses"; "Single glass"; "Double glass"; "Asymmetric glass"; "Gels: low-density, disordered, arrested states driven by attraction"; "Non-equilibrium gels resulting from arrested phase separation"; "Equilibrium gels of patchy particles"; "Charged colloids: Wigner glasses"; "Competing interactions: cluster glasses and gels"; "Gels of elongated clusters (or cluster gels)"; "Wigner glasses of clusters (or cluster glasses)"; "Appendix A. The ideal Mode Coupling Theory of the glass transition"; "Stochastic thermodynamics: A brief introduction"; "Preliminaries"; "Introduction"; "Nutshell thermodynamics"; "Nutshell equilibrium statistical mechanics"; "Nutshell Master equation"; "Ensemble stochastic thermodynamics"

Sommario/riassunto

Colloids are systems comprised of particles of mesoscopic size suspended in a liquid. They have recently been attracting increased attention from scientists and engineers due to the fact that they are nowadays present in many industrial products such as paints, oil additives, electronic ink displays and drugs. Colloids also serve as versatile model systems for phenomena and structures from solid-state physics, surface science and statistical mechanics, and can easily be studied using tabletop experiments to provide insight into processes not readily accessible in atomic systems. This book prese
