

Index

Active particles, 42
adiabatic approximation, 29
amphitropic, 299

Barker and Watts procedure, 309
Bjerrum length, 208, 272
Blending polymers, 48
Block copolymers, 85
boojums prevail, 353
Brownian dynamics, 23

Cahn number, 351
Cahn-Hilliard equation, 348
Chain propagators, 92
chiral crystal, 156
chiral recognition, 166
cholesteric, 300
coarse-grained, 271
coarse-graining, 2, 50
colloidal dispersions, 268
colloidal suspensions, 2
Columnar phase, 37
columnar phases, 321
commensurable periodic images, 313
condensing agent, 209
conformational hysteresis, 219
constitutive equation, 110
CornerS model, 324
Coulomb's law, 266

DAPI, 210
Darcy's law, 122
Debye-Hückel (DH) screening parameter, 280
Density functional theory, 17

developed mean-field lattice theory, 182
diffuse-interface method, 348
DiMarzio theory, 225
disorder coupling parameter, 289
DNA condensation, 213, 270
dressed counterions, 281
Dynamic SCF theory, 107
Dynamical density functional theory, 27

Edwards-Anderson replica ansatz, 287
electrostatic coupling parameter, 273
electrostatic interactions, 250
entropy-driven phase transitions, 4

Fick's law, 108
Flory-Huggins parameter, 56
fragmentation-based methods, 240
Functional integral, 279
functional integral, 91, 92
fundamental measure theory, 21

Gaussian chains, 91
Gay-Berne (GB) potential model, 318
Gibbs ensemble simulation technique, 63
Giesekus equation, 347
Gouy-Chapman (GC) length, 272
gyroid phase, 117

Hansen-Verlet rule of freezing, 12
Hard spheres, 14
harmonic AMBER-type force field, 326

- histone proteins, 208
 Hydrodynamic interactions, 31
 hydrogen bonding, 238
- interface-capturing methods, 348
 interface-tracking methods, 347
 intramolecular segregation, 224
 isotropic phase, 36
- Langevin dynamics simulation, 221
 lattice model polymer solutions, 182
 Lauritzen-Hoffman (LH) theory, 134
 Lebwohl-Lasher model, 308
 Lennard-Jones system, 317
 Lennard-Jones-system, 15
 Like-charged surfaces, 276
 Lindemann-criterion of melting, 11
 Liquid crystals, 297
 lyotropic phases, 299
- macroions, 271
 Maier-Saupe theory, 302
 Maxwell construction, 285
 Maxwell double tangent construction,
 13
 mean-field approximation, 93
 mesophase, 298
 molecular dynamics, 138
 molecular mechanics, 238
 molten-globule state, 199
 monotectic triple point, 180
 Monte Carlo (MC) simulations, 181
 Monte-Carlo, 305
- Navier-Stokes equation, 122
 Navier-Stokes equations, 346
 nematic phase, 36, 299
 nematogen, 303
 Non-local kinetic coefficients, 125
- odd-even effect, 328
 Onsager kinetic coefficients, 108
 orientational order parameter, 301
 Ornstein-Zernike equation, 32
 Oseen-tensor, 31
- partial coalescence, 342
 path integrals, 109
 Penetrable interactions, 17
 perforated lamellar phase, 120
 periodic boundary condition, 306
 persistence length, 208
 phase diagrams for L-L demixing, 183
 phase diagrams for liquid-solid
 coexistence, 183
- Plasma, 15
 Plastic crystal, 37
 Poisson-Boltzmann (PB) equation,
 274
 Polarizable force field model, 248
 polarizable model, 249
 polyelectrolytes, 270
 primitive models, 271
 protein folding, 199
 protein-DNA complexation, 270
- Q-tensor**, 310
- quantum mechanics (QM) methods,
 238
- Ramakrishnan-Yussouff (RY)
 approximation, 20
 Randomly charged surfaces, 286
 Rayleigh splitting, 227
 Reciprocal-space method, 100
 reciprocal-space method, 95
 reptation dynamics, 127
 rod-like particles, 33
 Rotne-Prager-tensor, 31
- satellite point defect, 353
 Saturn ring defect, 353
 self-consistent field theory, 87
 self-consistent mean-field theory, 94
 Self-propelled particles, 42
 shape anisotropy parameter, 318
 Single molecular images, 210
 single-disulfide analogues, 251, 252
 smectic phase, 299
 Smectic-A phase, 37
 Smoluchowski equation, 24

- soft matter, 1, 9, 268
Soft spheres, 15
Sticky hard spheres, 16
Stokes-Einstein relation, 24
Strong coupling, 274
strong segregation theory, 88
system size optimization, 118

thermotropic, 298
toroidal segment, 217
total persistence length, 208

Ultrasoft interactions, 16

van 't Hoff, 229
velocity gradient tensor, 124

weak coupling, 274
weak segregation theory, 87
wetting, 48, 53

Yukawa-system, 15
Yvon-Born-Green-hierarchy, 28