

Index

a

- acid-in-oil emulsion 357
- acidizing foams 357
- activators 336
- active smart textiles 445
- active textiles, *see* Smart textiles 469
- advancing front technique 112
- aerogels and xerogels 123, 398
- aerosol characterization
 - processes and stability
 - – aggregation coefficient 77
 - – diffusion flux 77
 - – drag coefficient 75
 - – Knudsen number 74
 - – Kolmogorov microscale 78
 - – Pollack-type counter 75
 - – Stephan flow 75
 - – three flow regimes 76
 - – time interval 77
 - – turbulence 78
- aerosol characterization
 - composition, concentration, size, and charge
 - – aerodynamic diameter 33, 70
 - – aggregate particle size 72
 - – Aitken nucleus counter 69
 - – bi-modal particle size distribution 69, 70
 - – cascade impactor 71
 - – condensation particle counter 71
 - – diffusion battery 73
 - – electrostatic precipitation 68
 - – filtration 68
 - – impingers 68
 - – light scattering analysis 72
 - – mass concentration 72
 - – mobility sizers 68
 - – nanoparticle aerosols 69
 - – sampling 67
 - – Wilson cloud chamber 73

- aerosol spray and foams 459, 461
- aerosols 4, 14, 434
 - chemical reaction method 276, 277
 - condensation method 275
 - disruption of bulk material approach 276
 - environmental 320
 - in environment 308
 - industrial applications 297
 - mineral processing 330
- agglomeration 200
- agglomerators 298
- aggregation 163
- agitation type flotation cell 334
- agricultural colloids 427–429
- air, mist, and foam drilling fluids 354
- Aitken particles 321
- Amott–Harvey indices 113
- Andrade equation 235
- aquatic suspensions 307
- asphalt emulsions 387
- asphaltenes 351

b

- background aerosols 320
- ball mill 273
- Bancroft's rule 264
- batch electro dialysis desalting apparatus 160
- Bingham plastic model 229
- bioaerosols 16
- biological aerosols 320
- biological and medical applications
 - aggregation phenomena 433
 - aspirating atomizers 437
 - colloids in diagnostics 444
 - dispepsia 436
 - emulsion carriers 441
 - liposomes 433
 - lung surfactant 435

- biological and medical applications (*contd.*)
 - microencapsulation 437
 - ointments 436
 - penicillin 436
 - polymer coatings 439
 - smart materials 445
 - surfactant replacement therapy 435
 - vesicles
 - – carriers 438
 - – definition 433
 - – interaction with vacuole 434, 435
 - – multilamellar 433
 - – unilamellar 433
 - biomimetics
 - adhesive surfaces 477
 - nanomechanics 478
 - reflective and antireflective surfaces 477
 - wetting and slip on surfaces 478
 - blindners 337
 - Brunauer, Emmett and Teller isotherm 25
 - bubble pickup 112
- c**
- capillary rise method 95, 96
 - carboxy methyl cellulose 269
 - Carreau equation 248
 - cascade impactors 68, 71
 - Cassie-Baxter regime 108
 - centrifugal effect 233
 - centrifugation and ultracentrifugation 53
 - champagne and beer foams 422
 - charged interfaces 147
 - chemisorption 27
 - clay suspension 272, 273
 - clouds 321
 - coffee beverage foam 423
 - colloid destabilization
 - agglomeration flocculation 200
 - aggregation and flocculation 195
 - bridging flocculation 198
 - clay particle suspension with gold particles 195, 196
 - depletion flocculation 200
 - filtration 200
 - foam stability
 - – adsorption of components 202
 - – critical foaming oil saturation 203
 - – crude oils defoamers 201
 - – emulsification and imbibition models 202
 - – entering coefficient 202
 - – foam-forming surfactants 201
 - – pseudoemulsion film model 203
 - – spreading coefficient 202
 - structures in flocculation 196
 - colloid mill 273
 - colloid rheology
 - dispersion rheology
 - – dispersed phase size and polydispersity 243
 - – Einstein equation 238
 - – emulsions and foams 244
 - – Mooney equation 243
 - – virial expansions 241
 - flow through pipeline 250
 - flow through porous media 252
 - measurement 214
 - – rotational methods 219
 - – tube methods 215
 - non-Newtonian flow, *see* Non-Newtonian flow 225
 - principles 210
 - surface rheology 248
 - colloid stability
 - aggregation number 192
 - destabilization, *see also* Colloid destabilization 195
 - destabilization rate 193
 - dispersion forces 167
 - DLVO, *see* DLVO theory 168
 - emulsion stability 184
 - flocculation and steric stabilization 178, 180
 - foam stability 188
 - hydration repulsive force 178, 179
 - hydrophilic and hydrophobic surfaces 178, 179
 - MRI of emulsion 164
 - orthokinetic aggregation 194
 - perikinetic aggregation 192
 - perikinetic coagulation 191
 - rate of aggregation 190
 - repulsive forces 165
 - shear rate 195
 - solution and surface equilibria 190, 191
 - steric stabilization
 - – disjoining pressure isotherm 182, 183
 - – factor 181
 - – gold number test 183
 - – volume-restriction steric repulsion 181
 - suspension stability 183
 - two double layers overlap 165, 166
 - colloidal dispersion
 - combatting error agents 465
 - nanoapplication 475
 - nanoencapsulation 471
 - nanoparticle suspensions 471

- nanoscience phenomenology, *see* Biomimetics 477
 - nanosheets 472
 - nanotomography 465
 - nanotubes 473, 474
 - near-field scanning optical microscopy 464
 - optofluidic microscope 464
 - quantum dots 471
 - scanning X-ray diffraction microscopy 463
 - semiconducting nanowires 473
 - semiconducting wires 472
 - smart materials, *see* Smart colloids 467
 - supermicroscopy 465
 - colloidal dispersions 1
 - aerosol preparation
 - – chemical reaction method 276
 - – condensation method 275
 - – direct dispersion method 277
 - aerosols 5, 14
 - aggregation 18
 - coalescence 18
 - definition 259
 - destruction/inhibition
 - – antifoaming/defoaming 283
 - – demulsification 279
 - emulsions, *see* Emulsions 5, 6, 261
 - environmental applications
 - – aerosols 323
 - – foam blankets 318
 - – marine oil spills 315
 - – rocks, sediments and soils 307
 - – soil remediation 311
 - – water and wastewater treatment 313
 - foam preparation 269
 - foams 5, 9
 - hybrids 17
 - lyophobic and lyophilic colloids 2
 - medical diagnostics 444
 - nanoscience vs. nanotechnology 6
 - Ostwald ripening 278
 - sedimentation 17
 - size fractionation 278
 - size ranges 3
 - suspension preparation
 - – biological method 274
 - – condensation 271
 - – description 271
 - – subdivision/dispersion 272
 - – thixotropic suspensions 274
 - suspensions 5, 11
 - two-phase systems 2
 - types of 3, 4
 - colloidosome 439
 - colloids
 - uses 291
 - column flotation 332
 - combatting terror agents 465
 - comminution 259, 260, 274
 - concentric cylinder rheometer 210, 219
 - conductivity 43, 45
 - cone and plate rheometer 221
 - confocal laser scanning microscopy (CLSM) 32
 - contact angle and wettability
 - advancing front technique 112
 - affinity 107
 - Amott–Harvey indices 113
 - bubble pickup 112
 - Cassie–Baxter condition 109
 - hydrophobic index 112
 - Lotus effect 109
 - low energy surfaces 108
 - microflotation 112
 - particle flotation 113
 - Pickering emulsions 113
 - sessile drop method 110
 - super-hydrophobicity 109
 - super-oleophobicity 109
 - surface tension 107
 - surface wetting descriptions 110
 - tilting plate method 111
 - two-phase separation 112
 - Wenzel equation 108
 - wettability index 113
 - cosmeceuticals 443
 - cosmetic skin care products
 - cold creams 455
 - formulating creams 453
 - foundations 457
 - liposomes 454
 - lotions 453, 457
 - microencapsulation 457
 - nanoemulsions 454
 - phase inversion temperature 456
 - polymers 454
 - rheological properties 452
 - stability 457
 - thixotropy 457
 - triacylglycerols 453
 - water-external microemulsions 456
 - cream liqueurs 416
 - cyclones 298
- d**
- Darcy's law 252
 - de-inking 392
 - defoamers 384

- demulsification 279, 293
 - demulsifying agents 369
 - dense non-aqueous phase liquids (DNAPLs) 311
 - depressants/deactivators 336
 - desert aerosols 321
 - desert dust storm aerosols 320
 - detergents 135, 389
 - detergents, shampoos and conditioners 449
 - dilatancy 229
 - dispepsia 436
 - dispersion 23
 - centrifugation and ultracentrifugation 53
 - characterization of aerosols
 - – composition, concentration, size, and charge 67, 70, 71
 - – processes and stability 74, 76, 77
 - characterization of emulsions
 - – appearance and emulsion type 56
 - – composition 59
 - – emulsion stability 58
 - characterization of foams
 - – appearance and foam type 60
 - – foam stability 62
 - characterization of suspensions
 - – chemical and surface analysis 66
 - – suspension stability 66, 67
 - conductivity
 - – Bruggeman equation 45
 - – dispersed phase identification 43
 - – sensing-zone techniques 44
 - permeability 29
 - porosity 28, 29
 - sedimentation and creaming
 - – average-shape quartz grains 51
 - – driving force 46
 - – droplet-droplet collisions 51
 - – fluid viscosity 46
 - – food emulsions 53
 - – frictional coefficient 49
 - – Hindered settling behaviour 53
 - – laminar flow 49
 - – Oden balance experiment 48, 49
 - – particle size distributions 47, 48
 - – Reynolds number 49
 - – sea salt aerosol droplets 46
 - – solvation 50
 - – terminal settling velocity 47
 - – viscosity bubbles 50
 - – water flow velocity 50, 52
 - – zone settling 50
 - size distribution
 - – diameter conventions 33
 - – dry classifiers 43
 - – emulsion droplets 30
 - – filtration and sieving 36
 - – Martin diameter 30
 - – microscopy 31, 35–37
 - – polyhedral species 30
 - – radiation scattering 38, 41
 - – size methods 32
 - – ultramicroscopy 42, 43
 - – wet classifiers 43
 - surface area 24, 26
 - surfaces 27
 - dispersion rheology
 - Carreau equation 248
 - dispersed phase size and polydispersity 243
 - Einstein equation 239
 - emulsions and foams 244
 - Mooney equation 243
 - virial expansions 241
 - dispersions
 - health hazards 300
 - dissolved air flotation 315
 - DLVO theory
 - attractive and repulsive energy curves 169, 170
 - definition 168
 - disjoining pressure apparatus 173
 - isotherm for foam film 174
 - peptization 178
 - practical guidelines 174
 - Schulze–Hardy rule 176
 - spherical particles, interaction energy curves 170, 171
 - thin liquid film, total interaction energy 172
 - van der Waals forces 168, 169
 - drop shape method 98, 100
 - drop weight and volume methods 98, 99
 - droplet pressure method 102
 - Du Nouÿ ring surface tension method 97
 - dust aerosol 16, 17
 - dust-suppressing foam blankets 348
- e**
- electric double layer (EDL)
 - distributions of counter- and co-ions 149
 - exponential decay 150
 - Stern model 151
 - electro-osmosis 151, 152
 - electrodialysis 159
 - electrokinetic sonic amplitude (ESA) 152
 - electrokinetics
 - charged interfaces 147
 - electric double layer 149

- electrodialysis 159
- electrophoresis, *see* Electrophoresis 154
- electrostatic properties in nonaqueous media 160
- isoelectric point 159
- point of zero charge 158
- zeta potential 154, 155
- electrolytic flotation 315
- electron beam dry scrubbing (EBDS) 300
- electrophoresis 151
 - intermittent sampling 158
 - microelectrophoresis 154
 - mobility 155
 - principle of 151
 - relaxation effect 157
- electrosonic amplitude 152
- electrostatic precipitators 298
- emulsification 129
- emulsifying activity index (EAI) 263
- emulsion carriers 441
- emulsion drilling fluids 354
- emulsion flotation 344
- emulsion polymerization process 397
- emulsions 4, 6, 434
 - demulsification 279
 - in environment 308
 - industrial applications 292
 - internal and external phase 6
 - mineral processing 330
 - oil-water-oil 8
 - preparation
 - – *in situ* method 261
 - – classical method 261
 - – EAI 263
 - – emulsifying capacity 263
 - – HLB concept 265
 - – oriented-wedge theory 265
 - – phase inversion 262
 - types of 6, 7
 - water-oil-water 7, 8
- enzymes 450
- evaporation/condensation reactors 300
- f**
- falling ball viscometer 222, 223
- Fann viscometer 221
- field-flow fractionation (FFF) 38
- filters 298
- fire fighting foams 399
- flame reactors 299
- floc flotation 344
- flocculation
 - agglomeration 200
 - and aggregation 195
 - bridging 198
 - depletion 200
 - filtration 200, 201
 - structures in 196
- flotation 314
- flotation column 340
- flotation separation 332, 334
- flotation-washing processes 394
- flyash 298
- foam blankets
 - dust-suppressing applications of 348
 - environmental 318
- foam food products
 - aerator machines 419
 - baked products 420
 - bovine serum albumin 419
 - carbohydrates 419
 - champagne and beer foams 422
 - coffee beverage foam 423
 - egg white 420
 - gelatin 420
 - rheological properties 420
 - surface visco-elastic properties 419
 - undesirable food foams 424
 - whipped toppings 421
- foam stability
 - adsorption of components 202
 - critical foaming oil saturation 203
 - crude oils defoamers 201
 - emulsification and imbibition models 202
 - entering coefficient 202
 - foam-forming surfactants 201
 - pseudoemulsion film model 203
 - spreading coefficient 202
- foaming 132
- foams 4, 9, 269, 434
 - froth flotation processes 11
 - generalized foam system 9, 10
 - in environment 308
 - industrial applications 295
 - internal and external phase 9
 - mineral processing 330
 - oil droplets within foam lamellae 10, 11
- focused beam reflectance measurement (FBRM) 40
- fog 16
- food colloids
 - aerosols 425
 - colloidal dispersion 406
 - food suspensions 425
 - interfacial layers 405
 - mixed 426

- food colloids (*contd.*)
 - oils 405
 - preparation 408
 - stability 409
 - stabilizing agents 406
 - food emulsions 261, 408
 - food foams 408
 - food suspensions 408
 - fracturing fluid emulsions 355
 - froth flotation 332, 341
 - fume 16

 - g**
 - Gibbs surface elasticity 128
 - Gibbs–Marangoni effect 127
 - Goethite 336
 - grain-size spectra 310

 - h**
 - Herdy Balls 317
 - hot wall reactors 300
 - humic substances 310
 - hydraulic mining and hydrotransport 329
 - hydrocolloid dressings 445
 - hydrocycloning 334
 - hydrophile–lipophile balance (HLB) concept 265, 266
 - hydrophilic colloids 2
 - hydrophobic colloids 2
 - hydrophobic index 112
 - hydrotropes 450

 - i**
 - ice nuclei 322
 - immersion cleaning 391
 - impingement-plate-tower scrubbers 299
 - in situ surfactant flood 311, 312
 - inkjet printing 386
 - intelligent textiles, *see* Smart textiles 469
 - interfacial energetics
 - contact angle and wettability 107
 - micelles, *see* Micelles 120
 - microemulsions 138, 139, 141
 - polymeric surfactants 129
 - pressure and curved surfaces 106
 - surface and interfacial tensions
 - – capillary rise method 95, 96
 - – dispersions 103–105
 - – drop shape method 98, 100
 - – drop weight and volume methods 98, 99
 - – droplet pressure method 102
 - – du Noüy ring surface tension method 97
 - – microfluidic methods 103
 - – oscillating jet method 100
 - – principles 86–90, 92, 93
 - – spinning drop method 101
 - – Wilhelmy Plate method 96, 97
 - – Young–Laplace equation 94
 - surface area 85
 - surface elasticity 126, 127
 - surfactants
 - – classification and analysis 118, 119
 - – detergents 135, 137
 - – emulsification 129, 130
 - – flotation 133
 - – foaming 132
 - – surface activity 114, 115
 - – suspensions 134
 - – wetting 134
-
- k**
- Krieger–Dougherty equation 243, 244
-
- l**
- laminar flow 211
- Langmuir isotherm 25
- lead-zinc recovery 342
- light scattering 38
- lipid drug emulsions 443
- liposomes 433, 435, 438
- liquid aerosols 14
- low shear flotation 332, 333
- lung surfactant 435, 436
- lyophilic colloids 2
- lyophobic colloids 2
-
- m**
- magmas 307
- manufacturing and materials science applications
 - ceramics manufacture 398
 - cleaning process
 - – de-inking 392–394
 - – detergent 389
 - – polymer synthesis 397
 - emulsions, foams, suspensions, and aerosols 383, 384
 - fire fighting foams 399, 400
 - inks and printing 386
 - metalworking 388
 - road paving 387
 - solid foams 401
 - surface coatings 394, 396
 - switchable glass 401
 - wood processing and papermaking 383, 385
- Marangoni surface elasticity 128
- marine oil spills 315

- marine snow 308
 - maritime aerosols 320
 - maximum droplet pressure method 102
 - membrane emulsification method 263
 - membrane filtration 36
 - mesopause 320
 - metalworking fluids 389
 - micelles
 - biocidal activity 123
 - cloud point 124
 - critical micelle concentration 121
 - flotation process 126
 - hydrophobic effect 120
 - Krafft point 123
 - liquid crystals 125
 - physicochemical properties 121, 122
 - solubility 123
 - sphere-to-rod transition 124
 - spherical 125
 - structure 120, 121
 - swelling clays 125
 - threadlike giant 124
 - vesicles 124
 - water-wetting 125
 - microemulsion polymerization 397
 - microemulsions 138, 389, 442
 - microencapsulation 437
 - microfiltration 37
 - microflotation 112
 - microfluidic methods 103
 - microfoams 295
 - microscopy 31
 - mineral flotation
 - carrier flotation 344
 - chemicals for 336
 - collectors 335
 - column flotation 332
 - emulsion flotation 344
 - film flotation 332
 - floc flotation 344
 - froth-flotation 332, 341
 - frothers 334
 - low shear flotation 332
 - turbulence 339
 - montmorillonite 309
 - Mooney equation 243
 - motor oil additives 292
 - mousse emulsions 294
 - multilamellar vesicles 433, 434
 - multiple emulsions 6
- n**
- nanoemulsions 38, 263
 - nanoscience 4, 6
 - nanotechnology 4, 6
 - naphthenic acids 347
 - Newton's law of viscosity 211
 - non-aqueous phase liquids (NAPLs) 311
 - non-humic substances 310
 - non-Newtonian flow 213, 224
 - dilatancy 229
 - pseudoplasticity 225, 226
 - rheomalaxis 233
 - rheopexy 232
 - shear rate
 - – vs. shear stress 225
 - – vs. viscosity 226
 - thixotropy 230
 - viscoelasticity 233
 - yield stress 230, 231
 - non-protein-stabilized emulsions
 - butter 417
 - carbonated soft drinks 418
 - flavour microemulsions 418
 - margarine 417
 - mayonnaise 418
 - peanut butter 418
 - shortening 417
- o**
- oilwells, gas wells, and near wells
 - drilling and completion fluids 353, 355
 - gas well unloading 357
 - well stimulation 355, 356
 - opacifiers 450
 - ophthalmic ointment 436
 - optical brighteners 451
 - organophilic clays 354
 - oriented-wedge theory 264, 265
 - orifice viscometers 218
 - orimulsion® 317
 - oscillating jet method 98, 100
 - oscillation viscometer 222, 223
 - Ostwald ripening 278
 - Ostwald viscometer 215
 - Ostwald-de Waele model 228
- p**
- packed-bed scrubbers 299
 - pea flocs 317
 - pendant drop method 98
 - peptization 311
 - permeability 29
 - personal care products 449
 - aerosol spray and foams 459, 461
 - cosmetic skin care products
 - – cold creams 455
 - – formulating creams 453

- personal care products (*contd.*)
 - foundations 457
 - liposomes 454
 - lotions 453, 457
 - microencapsulation 457
 - nanoemulsions 454
 - night cream and baby cream 454, 455
 - phase inversion temperature 456
 - polymers 454
 - rheological properties 452
 - stability 457
 - thixotropy 457
 - triacylglycerols 453
 - water-external microemulsions 456
 - detergents, shampoos and conditioners 449, 451
 - exfoliating scrubs 459
 - facial masks 459
 - lipstick and lip balms 458
 - nail polishes 459
 - pesticidal blankets 318
 - petroleum industry applications
 - emulsions, foams, suspensions, and aerosols 351, 352
 - oil sands processing 370, 372
 - oilwells, gas wells, and near wells
 - drilling and completion fluids 353, 355
 - gas well unloading 357
 - well stimulation 355, 356
 - pipeline transportation 372
 - reservoirs
 - chemical, microemulsion, and macroemulsion flooding 361, 364
 - foam injection processes 365, 367
 - incremental oil recovery 361, 363
 - oil mobilization and recovery 363
 - primary and secondary oil recovery 358, 359
 - surface treatment 368
 - upgraders and refineries 374
 - photozone counters 44
 - Pickering emulsions 113, 186
 - Plateau border 9, 132
 - polar aerosols 320
 - poly(alkyl methacrylate) 236
 - polymer coatings 439
 - polymer enhanced and gelling foams 366
 - polymer synthesis 397
 - polymeric surfactants 129
 - porosity 28, 29
 - potash 343
 - pressure capillary viscometer 216, 217
 - primary aerosols 14
 - printing inks 386
 - protective ointment 436
 - protein-stabilized emulsions 410
 - casein micelles 410
 - cheese 411
 - cream liqueurs 416
 - egg yolk proteins 413
 - ice cream 414
 - milk fat 410, 411
 - non-dairy creams 413
 - sauce bearnaise 414
 - soybean oil and milk protein emulsion 413
 - surface visco-elastic properties 412
 - pseudoemulsion films 203
 - pseudoplasticity 225, 226
- r**
- radiation scattering 38
 - rag layer emulsion 293
 - remote continental aerosols 320
 - reservoirs
 - chemical, microemulsion, and macroemulsion flooding 361, 364
 - foam injection processes 365, 367
 - incremental oil recovery 361, 363
 - oil mobilization and recovery 363
 - primary and secondary oil recovery 358
 - reverse osmosis 37
 - Reynolds number 212, 250, 251
 - rheomalaxis 233
 - rheopexy 232
 - riming 323
 - roughing flotation 341
 - rural aerosols 320
- s**
- scalping flotation 341
 - scavenging flotation 341
 - Schulze–Hardy rule 176
 - Searle-type rheometer 219
 - secondary aerosols 14, 319
 - sedimentation
 - causes 309
 - particle velocities in seawater 309
 - sedimentation and creaming
 - driving force 46
 - droplet–droplet collisions 51
 - fluid viscosity 46
 - food emulsions 53
 - frictional coefficient 49
 - hindered settling behaviour 53
 - laminar flow 49

- Oden balance experiment 48, 49
 - particle size distributions 47, 48
 - Reynolds number 49
 - sea salt aerosol droplets 46
 - solvation 50
 - terminal settling velocity 47
 - viscosity bubbles 50
 - water flow velocity 50
 - zone settling 50
 - sedimentation potential 152, 153
 - sedimentation-equilibrium method 56
 - selective flotation process 342
 - sessile drop method 98, 110
 - settling chambers 299
 - shear-thinning, *see* Pseudoplasticity 225
 - size distribution 30
 - smart colloids
 - electro-rheological materials 468
 - hydrogels 469
 - magneto-rheological materials 467
 - microgels 469
 - physical conditions 467
 - self-healing materials 470
 - smart dyes 469
 - smart textiles 469
 - switchable surfactant 468
 - smart materials 445
 - smart textiles 469
 - smog 16
 - smoke 16
 - “soft contact” microscopy 28
 - solid aerosols 14
 - solid foams 401
 - sparging 337
 - spinning drop method 101
 - spray cleaning 391
 - spray pyrolysis reactors 300
 - stratopause 320
 - streaming potential 151, 152
 - submersible oscillation viscometer 224
 - surface area 23, 85
 - surface coatings 394
 - surface dilational viscosity 248
 - surface elasticity 126, 127
 - surface emulsions 370
 - surface rheology 248
 - surface tension 85
 - surfactant replacement therapy 435
 - surfactants 302, 356, 408
 - classification and analysis 118
 - detergents 135
 - emulsification 129
 - flotation 133
 - foaming 132
 - surface activity 114
 - suspensions 134
 - wetting 134
 - suspensions 4, 11, 134, 434
 - amber particles 11
 - applications of 297
 - biological method 274
 - condensation method 271
 - description 271
 - fluidization and fluidized beds 12
 - in environment 308
 - internal and external phase 11
 - mineral processing 330
 - modes associated in clay 12, 13
 - particle size classification system 12, 14
 - rheology 331
 - subdivision/dispersion 272
 - thixotropic 274
 - sweep flocculation/coagulation 314
- t**
- tailings and tailing ponds 344, 347
 - therapeutic ointments 436
 - thermo-shrinking polymers 469
 - thermopause 320
 - thixotropic suspensions 274
 - thixotropy 230
 - three-stage electrostatic desalting system 283
 - tilting plate method 111
 - tropopause 320
 - two-phase separation 112
- u**
- ultramicroscopy 42, 43
 - ultrasonic vibration potential (UVP) 152, 153
 - unilamellar vesicles 433, 434
 - upgraders and refineries 374
 - urban aerosols 320
- v**
- venturi scrubbers 68, 299
 - viscoelasticity 233
 - viscosity 211, 234, 235
 - conversions for viscous fluids 218
 - experimental considerations 237
 - flotation recovery of bitumen 213
- w**
- water-external microemulsions 456
 - wearable technology, *see* Smart textiles 469
 - Weber number 92
 - Weissenberg effect 233
 - wellbore stabilizers 353
 - Wenzel regime 108

wettability index 113
wetting 134
Wilhelmy Plate method 96, 97
Wilson cloud chamber 275
wood processing and papermaking 383
writing inks 386

y

Young–Laplace equation 94

z

zeta potential 154–158, 313–315