

INDEX

- 1,2-dichloroethane, 145
1,2-dichloroethylene, 145
1,4-dioxane, 145
Abbreviations, xxii, xxiii
Absorbing capacity, 262
Accelerating electric, 171
Acceleration, 9
Accelerator equipment, 161
Accidental radioactive aerosol exhaust, 357
Accumulated residue, 218
Acetone, 145
Acid storage batteries, 381
Acrylonitrile, 166
Activation, 194
Additives to spinning solutions, 99
Adhesive-impregnated materials, 240
Adjoining channels, 283, 287
Aerodynamic diameter, 183, 184
Aerosol diffusion, 198
Aerosol filtration theory, 203, 251
Aerosol monitoring device, 369
Aerosol monitoring, 368
Aerosol of daughter products of radon, 182
Aerosol particle concentrations, 295
Aerosol particles of different origin, 183
Aerosol removal levels, 334
Aerosol removal, xiv
Aerosol, viii, ix, 252
Aerosol-particle rebound, 216
Aerosols that form upon wind life, 182
Air bubbles, 164
Air-tight installation, 306
Allergen-free ward, 353, 355
Ammonium chloride, 182
Analytic filters, 313, 368
Analytic purity, 87
Anti-burn dressing, 383
Anti-dust respirators, 373
Applications, 362
Applied electric field, 54

- Asbestos-fiber, 288
Associate molecules, 108
Astra respirator, 375
Asymmetric coils, 117
Asymmetry of macromolecules, 86
Atmosphere of Venus, 373
Atmospheric fog, 182
Auxiliary equipment, 163
Aviation, 379

Bacterial purification, 362
Battlefield filter, xii
Benzene, 145
Bernoulli integral, 22
BF-2, 45
Binder impregnated materials, 238
Biological activity, 87, 100
Biological grade HEMF, 319
Biological test, 334
Biotechnology, 341
Bipolar charging, 200
Blocking, 108
Boiling temperature, 243
Branches, 109
Branching, 85
Breakdowns of the layer, 65
Breaking length, 221, 246, 248
Bulk density, 8
Bulk median radius, 190
Burgers–Oberbeck formula, 55
Bushing, 146
Butyl acetate, 145

Capillary injectors, 141
Capillary pressure, 33, 43
Capillary-wave instability, 236
Capture coefficient, 203, 212
Capture effectiveness, 211
Capture equipment, 180
Capture of aerosol particles, 177, 201, 293
Capturing fogs, 255
Capturing radioactive aerosol particles, 360

Car-painting lines, 344
Cascade-type high-voltage DC power supply, 160
Cascade-type supplies, 162
Casings, 298
Catalytic activity, 100
Cavitation breakdown, 27
Cellulose diacetate, 166
Cellulose triacetate, 111
Cement dust, 182
Cement, 61
Chain flexibilities, 112
Chamber, 161
Channel depth, 278
Characteristic diffusion, 71
Characteristic dimension, 204
Characteristic times of diffusion, 70
Characteristics of fibrous materials, 220
Characteristics of polymer–solvent systems, 111
Characteristics of solvents, 81
Charge transfer, 47
Charged cylinder, 22
Charged sphere, 13
Chemical power sources, 137
Chemical strength, 87
Chemically aggressive fluids, 247
Chemically toxic aerosol particles, 359
Chemisorption, 90
Chemisorption capacity, 100
Chemosorbing filters, xiii
Chernobyl, 194
Chloroform, 145
Clean manufacturing facilities, 349
Clean manufacturing, 344
Cloud, 178
Clouding, 234
Clusters, 61
Coagulation constants, 199
Coalescence, 181, 199
Coefficient of capture of aerosol, 202

- Coefficient of friction, 242
Coefficient of hydrodynamic resistance, 219
Coefficients of diffusion, 206
Coefficients of hydrodynamic resistance, 284
Cohesion strength, 134
Collecting electrodes, 62
Combined effect, 209
Combustion-produced aerosols, 182
Communications engineering, 386
Compactness, 287
Concentration functions, 113, 114
Concentration, 106
Condensate collection container, 363
Condensation generation, 185
Condensation, 178, 191
Configuration, 273
Configurations of fibrous material, 272
Configuring, 281
Connecting stubs, 349
Construction and sealing of filters, 296
Construction, 269
Continuity equation, 132
Continuously ventilated enclosure, 3
Control of the filtering performance, 310
Control zone, 350
Convective current, 33, 39
Conveyor-type collecting electrode, 159
Copolymer in cyclohexanone, 45
Copolymer of styrene, 166
Copolymer of vinylidene fluoride with tetrafluoroethylene (fluoroplast-42), 95
Copolymers, 109
Corona discharge, 48, 51
Corrugated separators, 297
Corrugation patterns, 382
Cosmology, 386
Cost effectiveness, 269, 287, 293
Critical solubility temperature, 84
Crosslinked polymers, 90
Crosslinking agents, 100, 263
Crosslinking, 85
Cube-shaped sodium chloride, 312
Cunningham slip correction factor, 196
Cyclohexane, 145
Cyclohexanol, 19, 45, 145
Cyclohexanone, 145
Cylindrical filament, 71
Cylindrical model, 52, 55
Cylindrical shield, 150
Decay products, 180
Definitions, 178
Degree of crosslinking, 248
Degree of polymerization, 85, 110
Density of original substances, 184
Density, 289
Depolarization factor, 39
Deposits, 165
Design and principal states of electrospinning, 1
Design of filters, 286
Design of the clean chamber, 352
Deviations of the packing density, 235
Dibutyl phthalate, 45
Dichloroethane, 38, 45, 71
Dielectric permittivity, 17
Dielectrics, 59
Diffusion equation, 197
Diffusion of aerosol particles, 196
Diffusion, 205, 281
Dilute polymer solutions, 9
Dilute solutions, 118
Dimensions in aerosol particles, 195
Dimensions of selected aerosol particles, 182
Dimethylformamide, 145
Dimethylphthalate, 19
Discharge processes, 66
Discharge tunnel geometry, 65
Disperse phase, 84

- Disperse sorbents, 380
Dispersed liquids, 181
Dispersing of radioactive material, 194
Dispersing, 192
Dispersion, 178
Disposable light respirators, 239
Disposable respirators, 59
Dissociation energy, 88
Distribution density, 185
Distribution of adsorbed substance, 261
Doetsch–Popkov thesis, 55
Donor–acceptor, 82
Drifting fibers, 52, 56
Driving head, 287
Drum-type collecting electrodes, 156, 158
Dry formation of fibers, 103
Dry forming, 75
Drying-spinning processes, 104
Dryout, 40
Dumbbell-shaped cross sectional profiles, 138
Dust holding capacity, 224
Dust protection device, 351, 352, 353
Dust, 178
Dynamic viscosity, 5
Ecology, 350
Einstein–Smoluchowskii equation, 71
Elastic strain, 128
Elastic tubing, 153
Elastomer solutions, 135
Elastomers, 124
Electric atomization, 49
Electric breakdown of air, 63
Electric charge, 237
Electric energy, 33
Electric field, 55
Electric wind, 72
Electrical charge density, 165
Electrical conductivity, 6, 17
Electrical damage, 144
Electrical leakage resistance, 157
Electrical mobility, 29, 50
Electrical polarization, 297
Electrical potential, 50
Electrical properties of aerosols, 199
Electrical resistivity, 137
Electrodynamic atomization, xi
Electroflocculation, 161
Electrofluid dynamic spraying, 193
Electro-gasodynamic injectors, 153
Electro-gasodynamic multijet injector, 152
Electro-inertia injectors, 154
Electromotive, 22
Electron avalanches, 62, 64
Electron microscope photographs, 372
Electronics industry, 342
Electron–ion technology, 68
Electron–ion transfer, 87
Electrospinning mechanism, 53
Electrospinning, xi
Electrostatic induction machine, 161
Electrostatic painting, 161
Electrostatic precipitators, 60
Electrostatics, 208
Elevated gas pressures, 313
Elongation, 243, 245
Emission mechanism, 200
Emitting electrode, 137
Energy-conservation properties, 295
Entanglement, 206, 281
Entropy, 107
Epoxy resins, 98
Equation of motion, 12
Equipment arrangement, 141
Equipment layouts, 141
Equivalent radius, 282
Ethanol, 45, 114, 145
Ethyl acetate, 145
Ethylcellulose, 91
Excess energy paradox, 38
Exhaust cupboard, 357

- Experimental conditions, 26
Explosion, 144
Externally produced stress, 127
Feedstock, 79
Fiber density, 221
Fiber diameter, 35, 212
Fiber radius, 221
Fiber-forming polymers, 79, 80
Fiber forming, x
Fiberglass, 288
Fibrillation, 136
Fibrous materials, 1
Filaments, 232
Filter design, 269
Filter effectiveness, 201
Filter quality coefficient, 202, 248
Filter replacement, 335
Filter stations, 206, 310
Filter, 201
Filtering action factor, 224
Filtering cloths, 250
Filtering layer thickness, 286
Filtering layer, 177, 273, 279
Filtering material strength, 221
Filtering performance, 254
Filtering properties, 68, 248
Filtration coefficient, 252, 253
Filtration law, 202
Filtration rate, 212, 276
Fire resistance, 87
First dust-accumulation stage, 254
First stage of filtration, 216
First stage, 219
Fission of uranium, 374
Flame photometry, 370
Flammability and toxicity data
 of solvents, 145
Fleece fibers, 61
Flexible-chain macromolecules, 107
Flexible-chain molecules, 118
Flow curves, 117, 119, 120, 121, 122, 123
Flow diagram of the industrial
 electrospinning, 142
Flow of polymer solutions, 16
Flower dust, 182
Fluid dynamic resistance, 215
Fluoroplastics F-26 or F-42, 166
Fluoropolymers, 89
Focusing injector end-piece, 149
Fog, 178
Food products industry, 333
Food products, 362
Forces, 22
Forest fires, viii
Formation of aerosols, 191
Formation of fibrous layer, 58
Formation of primary and secondary
 jets, 131
Formation of radioactive aerosols, 193
Fractal picture, 234
Frames, 297
Free paths, 62
Fruit juice storage, 364
Fume, 178
Functional and performance properties
 of Petryanov filter (PF), 227
Functional properties, 108
Fundamentals of electrospinning, xiv
Furfural, 145
Galvanometer, 46
Gamma-irradiated, 253
Gamma radiation, 248
Gas filtration materials, 174
Gas filtration, 163
Gas masks, 250
Gas purification device, 210, 367
Gas-discharge lamp, 41
Generator of aerosols, 318
Generator of test aerosols, 317
Global nephelometers, 164

- Glycerin, 19, 45
Graft polymer, 84
Graphite cloth, 383
Gravitational precipitation, 195
Gravity effect, 208
Gravity precipitation of spherical aerosol particles, 196

Haze, 178
Health protection, 332
Heat and mass transfer, 70
Heat of vaporization, 73
Heat-resistant materials, 247
HEGP, vii
Hemispherical droplet, 24
HEPA (high efficiency particulate), 222
Heterocyclic polymers, 88
Heterogeneous aerosols, 179
Hexafluoropropylene, xiii
High elasticity, 125
High voltage, 151
High-effectiveness aerosol filters, 222
High-effectiveness filtration, 215
High-effectiveness purification, 223
High-efficiency aerosol filters, 269
High-efficiency filtering, 270
High-efficiency gas filtration, 331
High-efficiency gas purification, vii
High-elasticity modulus, 130
High-molecular polyethylene oxide (polyox), 98
High-power electric current pulses, 376
High-purity hydrofluoric acid, 345
High-purity material storage facilities, 362
High-voltage DC power supply, 160
Homogeneous bulk condensation, 184
Homogeneous nucleation, 191, 192
Hot cell, 354
Humidity of the carrier gas, 179
Hydrodynamic resistance coefficient, 251
Hydrodynamic resistance, 163, 274

Hydrogen fluoride, 345
Hydrophilic fibrous materials, 169
Hydrophilizing, 137

Immunology Institution, 351
Impermeable fibers, 219
Impurities, 104
Incompressible gas, 195
Indirect parameter, 18
Industrial electrospinning, 49, 144
Industrial equipment arrangement, 143
Industrial equipment, 146, 167
Inertia, 207
Information technologies, 379
Initial and characteristic viscosities, 106
Initial permeability, 280
Initial porosity, 265
Initial viscosity, 116
Injection nozzle, 8
Injector header with replaceable tapered head, 148
Injector header, 151
Injector manifold, 143
Injector rocking mechanism, 164
Injectors, 52, 159
Instrumentation, 320
Insulated platform, 146
Interception, 206
Inter-fiber contact, 242
Intermolecular interaction, 83
Interrelated computational problems, 47
Inverse current, 68
Ion-exchange filters xiii, 8, 142
Ion-exchange, resin, 163
Ionization, 63, 180
Ionizing irradiation, 247
Irreversible strain, 130
Isochronism criterion, 23
Isolated channels, 283
Jet formation zone, 54
Jet shapes, 30

- Kelvin–Voigt model, 128
Kinematic layout of single-jet injectors, 154
Kinetic energy, 33
Laboratory dewatering filter, 366
Linear polymers, 130
Linear velocity, 72
Lines of force, 53
Liquid filament, 70, 108
Liquid supply system, 42
Load distribution, 277
Lognormal density, 189
Lognormal distribution, 188, 189
Longitudinal gradient of mean velocity, 21
Longitudinal shapes, 20
Longitudinal viscosity, 134
Low-output equipment, 157
Lycopodium spores, 182
Macro-defects, 68
Macro-flaws, 236
Macromolecular factor, xiv, 103, 105, 131
Macromolecule packing density, 83
Macromolecule solution, 129
Macromolecule, 105
Macroscopic properties, 128
Magnetic permittivity, 264
Manufacture of organic semi-finished products, 337
Manufacturing cycle, 165
Manufacturing process, 164
Manufacturing, 269
Mass of a spherical particle, 184
Maximum elongation, 246, 247
Maxwell-fluid model, 127
Maxwellian viscoelastic liquid, 133
Mean fluid-dynamic radius of fibers, 221
Measured electric, 45
Measuring equipment, 346
Measuring instruments, 348
Mechanism of electrospinning, 1
Medical institutions, 349
Medical instrumentation, 333
Medicinal injection, 379
Medicinal, ix
Metal production, 333
Meteorology, 386
Metering nozzle, 25
Methanol, 145
Methyl acetate, 145
Methyl cellosolve, 145
Methyl ethyl ketone, 145
Methyl isobutyl ketone, 145
Methylene chloride, 145
Methylmethacrylate, 166
Micromanometers, 164
Microstructural homogeneity, 294
Microstructure defects, 235
Microstructure flaws, 236
Microstructure, 227, 223, 230
Military equipment and technology, 333
Military technology, 386
Miniaturization, 288
Ministry of medium machinery manufacture, 321
Mist, 178
Mobile military facilities, 360
Mobile military objects, 361
Mobility of particles, 197
Modular filters, 310, 320
Modular high-efficiency aerosol filters (HEMF), 296
Molecular chains, 83
Molecular impurities, 262
Molecular mass, 85, 106
Monolayers, 66
Monomer liquids, 47
Monotone symbiotic functions, 40
MSN, 27, 45
Multi-component polymer, 110
Multi-component spinning solutions, 74
Multijet injectors, 152, 153

- Multijet electro-centrifugal injector, 153
Multiple splitting of the primary jets, 136
Multiple sterilization, 344
Museum treasures, 362

Nascent primary spinning solution, 48
Navier–Stokes equation, 10
Neutron activation cross sections, 312
Newly charged layer, 65
Newton's law, 127
Newtonian fluids, 46
Nitromethane, 145
Nomenclature, xvii
Non-blow-down injector header, 150
Non-blow-down injector, 149
Non-combustible fluoropolymers, 265
Non-conducting charged fibers, 64
Non-Newtonian dilantant fluid, 124
Non-pressed fibrous material, 292
Normal distribution, 187
Nuclear industries, 341
Nuclear power plant, 356
Nuclear reactor, 354

Operating lifetime, 257
Optimization of the structure
 of filtering, 223
Organic solvents, 99
Orientation processes, 74
Oscillograms of discharge current, 67

Packing density, 65, 138, 218, 231, 242,
 289, 293
Parallel layers, 285
Parasitic gas discharges, 56
Particle capture, 205, 212, 377
Particle diameter, 211
Particle size distribution, 185
Particle size, 207, 210
Peclet number, 260
Penetrant size, 209
Penetration, 274

Perchlorovinyl resin
 in 1,2-dichloroethane, 28
Perchlorovinyl resin
 in methylchloroform, 45
Perchlorovinyl resin, 45, 71, 91, 111
Perchlorovinyl, 166, 167
Performance characteristics, 270
Perfumes, 379
Periodic sterilization, 362
Permeability of vapor, 261
Permeability, 201, 251, 252, 256, 257, 260,
 279, 290
Permissible concentration, 144
Permissible volumetric radioactivity, 181
Personnel safety, 356
Petryanov filters, vi, 6, 141
Pharmaceutical powders, 341
Pharmaceuticals, 341
Pharmaceutics, 333
Phase diagrams, 84
Phase state, 83
Phase transitions, 70
Phenol formaldehyde (novolac and resol)
 resins, 93
Photochemical aerosol, 182
Photomaterials, 379
Phthalic anhydride, 336
Physical characteristics, 227
Physical properties of solvents, 4
Physico-chemical properties, 177
Plasticizers, 100
Plenum-exhaust ventilation, 361
Pneumatic control systems, 346
Pneumatic monitoring and control
 systems, 348
Poiseuille approximation, 275
Poiseuille velocity distribution, 14
Polarized charge, 238
Pollution, v
Polyacrylate, 111, 166
Polyacrylonitrile, 92

- Polyacrylonitrile in dimethylacetamide, 45
Polyarylatesulfonoxides, 87
Polyarylate F-2, 95
Polyarylide, 96, 111, 166
Polyarylonitrile, 166
Polybenzimidazoles, 89
Polybenzthiazoles, 89
Polycarbonate (diflon), 97
Polycondensation polymers, 88
Polyesters, 88
Polyethers, 88
Polyethylene oxide in water, 45
Polyfenilenes, 88
Polyimide, 89, 97, 166
Polyisobutylene, 111
Polymer selection, 86
Polymer solutions, 46
Polymer spinning, 2
Polymer-solvent feedstock, 104
Polymethyl metacrylate, 92, 111, 166
Polymethyleneoxide (polyformaldehyde), 97
Poly-N-phenyl-benzimidazoles, 89
Polyphenylenoxide, 96
Polystyrene, 92, 111
Polysulfone, 96, 167
Polytetraflouoroethylene (fluoroplast-4), 94
Polytetrafluoroethylene, 87
Polytrifluorostyrene, 95, 111, 166
Polyvinyl acetate, 93
Polyvinyl alcohol in water, 45
Polyvinyl alcohol, 93
Polyvinyl butyral (butvar), 94, 111
Polyvinylidene fluoride
(fluoroplast-2), 94, 111
Polyvinylpirrolidone, 97
Polyvinylpyrrolidone in ethanol, 45
Ponderomotive force, 30, 151
Porosity, 263
Porous materials, 59, 376
Porous polymer membranes, 380
Portable device for first aid, 384
Portable devices, 162
Power consumption, 249
Power-law distributions, 186
Practical problems, 331
Precipitated material, 61
Precipitation of liquid particles, 220
Predicted minimum and maximum fiber
diameters, 35
Predicting properties, 38
Predicting radius, 31
Preparatory equipment, 162
Pressure control, 315
Pressure drop across filter, 214
Pressure of gas, 213
Primary droplets, 30
Primary jet acceleration, 17
Principal equipment, 146
Principal properties of aerosols, 178
Principal properties of fibrous
materials, 228
Process current, 58
Process parameters, 170
Production equipment, 332
Production of electronic components
and devices, 350
Production parameters, 169
Production zone, 350
Prolonged storage, 232
Propanol, 145
Properties of fibers, 103
Properties of liquids, 41
Pulsatile period, 54
Purification of industrial gases, 335, 338
Purification stages, 335
Purification system, 142
Purified gas, 273
Purifying air and ammonia, 339
Quasi-one-dimensional approximation, 25
Quasi-one-dimensional model, 132
Radial velocity distribution, 133

- Radial velocity, 132
Radioactive aerosols in reactor premises, 182
Radioactive aerosols, 180, 182
Radioactive atoms, 190
Radioactive decay, 194
Random collisions, 200
Random process, 36
Rate of straining, 134
Rate vaporization, 72
Rational configuring, 291
Raw materials, 79
Reactor operating conditions, 356
Real-time thresholds, 64
Receiving roller, 131
Recirculating air purifier, 358
Recovering solvents, 144
Rectangular channels, 307
Refrigerant purification, 368
Relative humidity, 253
Relative hydrodynamic resistance, 255, 256, 292
Relaxation behavior of rheological properties, 125
Relaxation time, 126
Replaceable filtering element, 375
Residual solvent, 136
Resistance, 290
Resol and polyvinylbutyral, 167
Respiration organs, 173
Respirator, 250, 373
Respiratory organs, xiii
Reynolds number, 204
Rheological properties, 104, 105, 106
Rigid-chain macromolecules, 107
Rigid chain, 110
Rupture characteristics, 241
Saturation column, 163
Sealing capacities, 258
Sealing, 297
Second dust-loading stage, 217
Second stage, 219
Secondary emission of electrons, 65
Secondary jets, 32, 35, 135, 138
Secondary liquid filaments, 234
Self-cleaning operation, 362
Semi-ellipsoid, 24
Semi-transparent oppositely charged electrode, 34
Service lifetime, 335
Service personnel, 160
Shape of droplet, 11
Shape of fibers in PF, 231
Shape, dimensions, density and chemical composition aerosol particles, 181
Shear stress, 124
Short-duration swellings, 67
Sieve mechanism, 205
Single spinning element, 66
Single-jet glass injector, 147
Single-jet polyethylene injector, 148
Single jet, 146
Size spectrum, 186
SKF-26, 111
Sleeve-type HEMF, 304
Slowly relaxing polymer-solvent systems, 74
Smog, 178
Smoke, 178
Solid sorbents, 259
Solidification time, 171
Solubility, 81, 83
Solvents, 98
Solvent evaporation, 37
Solvent vapor, 71
Sorbing filters, xiii
Sorption, 258
Sound absorption, 264
Sources of aerosols, 179
Space electric charge, 52
Spark discharges, 60, 172, 173

- Specific capacity, 378
Specific power, 249
Specification of fibrous material, 222
Spectra of fiber radii, 37
Spectrometric aerosol particle counters, 319
Spectrum of relaxation times, 129
Spinneret, 136
Spinning chamber, 158
Spinning solution, 18, 99, 103, 166, 233
Spinning-chamber exhaust, 143
Spinning-solution header, 147
Splitting of primary jet, 32
Stability of liquid particles, 191
Stability of metering, 7
Stable dispersions, 100
Stable isotopes, 312
Standard oil fog, 311
Standard pressure, 64
Standard resistance, 284
Standard test conditions, 311
Standard threshold mode, 235
Start page 87
State Standards, 315
Steady jets, 16
Steady primary jet, 10
Steady-state jet, 14, 151
Sterilization, 332
Stiff framework, 299
Stiffening adhesives, 288
Stokes number, 205
Strain rate, 134
Straining rates, 171
Strength characteristics of filtering materials, 241
Structural viscosity relaxation times, 126
Submicron dimensions, 271
Substrata of gauze, 155
Successive splitting, 36
Sulfur dioxide fog, 182
SULPA (super ULPA), 222
Surface and structure, 233
Surface roughness, 234
Surface stress, 152
Surface tension, 5
Surfactants, 100
Swelling, 109
Technology of electrospinning, 141
Technology, 144
Teflon-coated equipment, 163
Temperature dependence, 115
Temperature of gas, 213
Temperature of solidifying liquid filament, 73
Temperature reduction, 73
Temperature, 109
Tensile strength, 243, 245
Terminology and definitions, 201
Test aerosols, 311
Test equipment, 313
Testing filtering materials, 314
Testing, 269
Tetrahydrofuran, 145
Thermal coagulation, 198
Thermal conductivity, 263
Thermal decomposition, 265
Thermal, 89
Thermal, chemical and radiation resistant properties, 243
Thermally crosslinked polyarylide, 245
Thermally resistant polymer, 87
Thermally unstable materials, 266
Thermochemical stability, 91
Thermodynamic similitude, 106
Thickness nonuniformities, 68
Thickness of the liquid layer, 44
Thickness, 290
Three-stage purification of air, 344
Threshold potential, 57
Threshold stress, 125
Time of accumulation, 218
Time-random current pulses, 67

- Tobacco smoke, 182
Toluene, 145
Toxicity, 144
Transition from dropwise flow
 into a steady jet, 15
Translational motions, 155
Transverse components
 of the ponderomotive force, 131
Trichloroethane, 145
Two-dimensional configuration, 275
Two-dimensional motion, 155
ULPA (ultra low penetration air), 222
Ultra-pure substances, 365
Uniaxial elongation, 240, 245
Uniaxial stretching, 239, 244
Unipolar corona, 60
Unsteady-state filtration effects, 215
Unsteady-state jets, 146
Upward-directed jet, 42
Use of electrospun fibrous materials, 371
Vacuum device, 366
Van der Waals interaction, 208
Vaporization and drying unit, 343
Ventilation effluent, 359
Vertical grid, 308
Vertical sealing grid, 309
Vertical steel grid, 307
Veterinary medicine, 385
Vinyl series polymers, 90
Vinylidene fluoride, xiii
Viscoelastic body, 125
Viscoelastic spinning solutions, 85
Viscoelasticity, 125
Viscosimetric constant, 115
Viscosity anomaly, 117
Viscosity of gas, 203
Viscosity of liquids, 19
Viscous liquid, 43
Viscous stress tensor, 29
Volatility, 243
Volcanic dust, 179
Volcanic eruptions, viii
Volt-ampere characteristic, 57
Volume density, 237
Volume porosity, 234
Volume, 290
Volumetric dissolution, 259
Volumetric flowrate, 7, 17, 44, 276
Volumetric throughput, 287
Water, 145
Weak nitric acid, 339, 340
Wettability, 87, 258
Working area, 289, 290
Working surface, 294
Wound dressings, 384