Index

A Drop velocity (see also LDV), 15, 18 DSI (see also Measurement tech-Aerodynamic force, 8 niques), 91, 93 Aerosol, 98 Visibility/intensity, 94 Anemometry, 174, 175, 181 ASTM Standard E 799-81, 26, 29, 85, E 87 Energy distribution, 62 В F Bachalo, W.D., 5 Ferrenberg, A.J., 82 Fringe spacing, 47 C Calibration (see also Standard refer-G ence materials), 49, 51, 156, Gas-phase velocity (see also Ane-175 mometry), 20 Cerwin, S. A., 72 Glass beads (see also SRM's), 174 Chigier, N. A., 169 Condensation, 11 H D Hirleman, E. D., 35 Holography (see also Measurement Diffraction (see also Measurement techniques), 18 techniques), 38, 174 Dodge, L. G., 72 Doppler burst, 91, 182 Drag coefficients, 173 Ice formation, 10, 11 **Droplets** Image analysis, 123, 179 Aspherical, 105 Electronic, 180 Evaporating, 102 Optical, 180 Levitated, 100 Quantimet, 141, 142 Nonevaporating, 101 Restoration, 131 Drop size distribution, 23, 26 Vicom, 129 Rosin-Rammler, 26, 68, 77 Ingebo, R. D., 91, 194 Spatial, 14, 19, 29, 30, 185 Injectors Temporal, 14, 19, 29, 30, 185 Coaxial, 84

Diesel fuel, 139 Electronic, 140 High pressure, 137, 139 Propellant, 84 Interferometry (see Measurement techniques) Intrusive (see Sampling techniques)	Laser doppler velocimiter, 23, 47 Light scattering, 9, 15, 63 Single particle counter, 36, 37, 46, 192 Meteorology (see also Ice formation), 177
initiative (see Sampling teeningues)	N
J	Nonintrusive (see Sampling tech-
Jenkins, W.D., 98	niques)
T	Number density, 12, 14, 19, 181
L	0
Latex spheres (see also Standard refer-	0
ence materials), 174 LDV (see also Measurement tech-	Oberdier, L. M., 123
niques), 10, 12	P
Lefebvre, A. H., 61	
Lettieri, T. R., 98	Polarization ratio, 99
Light scattering (see Measurement techniques)	Popa, D. M., 137
Light sources, 174	R
Liquid water content, 14, 15	
M	Rain, 11 Reference frame
M	
Magnus, D. E., 153	Eulerian, 175
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79	
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79 Mean diameter, 42, 91, 163	Eulerian, 175 Lagrangian, 175
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79 Mean diameter, 42, 91, 163 SMD, 7, 28, 42, 62, 77, 85, 148,	Eulerian, 175 Lagrangian, 175 Resonant light scattering (see also Measurement techniques), 98 Rizk, N. K., 61
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79 Mean diameter, 42, 91, 163 SMD, 7, 28, 42, 62, 77, 85, 148, 155, 165, 176, 178	Eulerian, 175 Lagrangian, 175 Resonant light scattering (see also Measurement techniques), 98 Rizk, N. K., 61 Rosin-Rammler (see Drop size distri-
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79 Mean diameter, 42, 91, 163 SMD, 7, 28, 42, 62, 77, 85, 148,	Eulerian, 175 Lagrangian, 175 Resonant light scattering (see also Measurement techniques), 98 Rizk, N. K., 61 Rosin-Rammler (see Drop size distribution)
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79 Mean diameter, 42, 91, 163 SMD, 7, 28, 42, 62, 77, 85, 148, 155, 165, 176, 178 Measurement techniques, 14, 23, 138, 172	Eulerian, 175 Lagrangian, 175 Resonant light scattering (see also Measurement techniques), 98 Rizk, N. K., 61 Rosin-Rammler (see Drop size distri-
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79 Mean diameter, 42, 91, 163 SMD, 7, 28, 42, 62, 77, 85, 148, 155, 165, 176, 178 Measurement techniques, 14, 23, 138, 172 Hot wax, 88, 138 Hot wire probe, 19, 153	Eulerian, 175 Lagrangian, 175 Resonant light scattering (see also Measurement techniques), 98 Rizk, N. K., 61 Rosin-Rammler (see Drop size distribution) Round robin tests, 170
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79 Mean diameter, 42, 91, 163 SMD, 7, 28, 42, 62, 77, 85, 148, 155, 165, 176, 178 Measurement techniques, 14, 23, 138, 172 Hot wax, 88, 138 Hot wire probe, 19, 153 Imaging, 13, 17, 23, 30, 85, 11, 179	Eulerian, 175 Lagrangian, 175 Resonant light scattering (see also Measurement techniques), 98 Rizk, N. K., 61 Rosin-Rammler (see Drop size distribution) Round robin tests, 170
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79 Mean diameter, 42, 91, 163 SMD, 7, 28, 42, 62, 77, 85, 148, 155, 165, 176, 178 Measurement techniques, 14, 23, 138, 172 Hot wax, 88, 138 Hot wire probe, 19, 153 Imaging, 13, 17, 23, 30, 85, 11, 179 Cinematography, 193	Eulerian, 175 Lagrangian, 175 Resonant light scattering (see also Measurement techniques), 98 Rizk, N. K., 61 Rosin-Rammler (see Drop size distribution) Round robin tests, 170 S Sampling techniques
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79 Mean diameter, 42, 91, 163 SMD, 7, 28, 42, 62, 77, 85, 148, 155, 165, 176, 178 Measurement techniques, 14, 23, 138, 172 Hot wax, 88, 138 Hot wire probe, 19, 153 Imaging, 13, 17, 23, 30, 85, 11, 179 Cinematography, 193 Direct photography, 112, 193	Eulerian, 175 Lagrangian, 175 Resonant light scattering (see also Measurement techniques), 98 Rizk, N. K., 61 Rosin-Rammler (see Drop size distribution) Round robin tests, 170 S Sampling techniques Batch, 35, 36
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79 Mean diameter, 42, 91, 163 SMD, 7, 28, 42, 62, 77, 85, 148, 155, 165, 176, 178 Measurement techniques, 14, 23, 138, 172 Hot wax, 88, 138 Hot wire probe, 19, 153 Imaging, 13, 17, 23, 30, 85, 11, 179 Cinematography, 193 Direct photography, 112, 193 Holography, 18, 117, 185	Eulerian, 175 Lagrangian, 175 Resonant light scattering (see also Measurement techniques), 98 Rizk, N. K., 61 Rosin-Rammler (see Drop size distribution) Round robin tests, 170 S Sampling techniques Batch, 35, 36 Collection plate, 140
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79 Mean diameter, 42, 91, 163 SMD, 7, 28, 42, 62, 77, 85, 148, 155, 165, 176, 178 Measurement techniques, 14, 23, 138, 172 Hot wax, 88, 138 Hot wire probe, 19, 153 Imaging, 13, 17, 23, 30, 85, 11, 179 Cinematography, 193 Direct photography, 112, 193	Eulerian, 175 Lagrangian, 175 Resonant light scattering (see also Measurement techniques), 98 Rizk, N. K., 61 Rosin-Rammler (see Drop size distribution) Round robin tests, 170 S Sampling techniques Batch, 35, 36
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79 Mean diameter, 42, 91, 163 SMD, 7, 28, 42, 62, 77, 85, 148, 155, 165, 176, 178 Measurement techniques, 14, 23, 138, 172 Hot wax, 88, 138 Hot wire probe, 19, 153 Imaging, 13, 17, 23, 30, 85, 11, 179 Cinematography, 193 Direct photography, 112, 193 Holography, 18, 117, 185 Laser video, 125 Single lens, 112 Two lens, 115	Eulerian, 175 Lagrangian, 175 Resonant light scattering (see also Measurement techniques), 98 Rizk, N. K., 61 Rosin-Rammler (see Drop size distribution) Round robin tests, 170 S Sampling techniques Batch, 35, 36 Collection plate, 140 Intrusive, 23 Nonintrusive, 10, 14, 16, 23 Scrubbers, 12
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79 Mean diameter, 42, 91, 163 SMD, 7, 28, 42, 62, 77, 85, 148, 155, 165, 176, 178 Measurement techniques, 14, 23, 138, 172 Hot wax, 88, 138 Hot wire probe, 19, 153 Imaging, 13, 17, 23, 30, 85, 11, 179 Cinematography, 193 Direct photography, 112, 193 Holography, 18, 117, 185 Laser video, 125 Single lens, 112 Two lens, 115 Impact, 138	Eulerian, 175 Lagrangian, 175 Resonant light scattering (see also Measurement techniques), 98 Rizk, N. K., 61 Rosin-Rammler (see Drop size distribution) Round robin tests, 170 S Sampling techniques Batch, 35, 36 Collection plate, 140 Intrusive, 23 Nonintrusive, 10, 14, 16, 23 Scrubbers, 12 Simon, H. C., 22
Magnus, D. E., 153 Malvern instrument, 40, 44, 70, 72, 79 Mean diameter, 42, 91, 163 SMD, 7, 28, 42, 62, 77, 85, 148, 155, 165, 176, 178 Measurement techniques, 14, 23, 138, 172 Hot wax, 88, 138 Hot wire probe, 19, 153 Imaging, 13, 17, 23, 30, 85, 11, 179 Cinematography, 193 Direct photography, 112, 193 Holography, 18, 117, 185 Laser video, 125 Single lens, 112 Two lens, 115	Eulerian, 175 Lagrangian, 175 Resonant light scattering (see also Measurement techniques), 98 Rizk, N. K., 61 Rosin-Rammler (see Drop size distribution) Round robin tests, 170 S Sampling techniques Batch, 35, 36 Collection plate, 140 Intrusive, 23 Nonintrusive, 10, 14, 16, 23 Scrubbers, 12

Sprays	Glass beads, 50, 174
Burning, 25, 77	Graticules, 174
Diesel, 137, 173	Polystyrene spheres, 50, 52, 174
Evaporating, 74	Reticules, 50, 69
Heavy fuel, 9	Surface modifier, 140
Herbicides, 7	
Icing (see Ice formation)	T
Insecticides, 7 Liquid fuel, 8	Thompson, B. J., 111
Molten wax, 23, 138	Thresholding technique, 141
Monodisperse, 13, 49, 50, 174	Tishkoff, J. M., 1
Natural, 11, 171	Tomography, 185
Polydisperse, 49, 51, 173	Turbulence, 181
Slurry, 8	V
Standard reference materials (SRM's),	V
13, 171	Varda, K. S., 137