

Index

a

Abbe number 99
 Abelès method 77
 absorption 65
 active pixel sensor 112
 aluminum doped zinc oxide 178
 angular dispersion 109
 anomalous dispersion 38
 anti reflection coating 150
 antimony doped tin oxide 178
 AR coating 150
 ATO 178
 AZO 178

b

birefringent crystal 101
 blackbody radiation 94
 blaze wavelength 110
 blazed gratings 33
 Bragg grating 30
 Brendel oscillator 38
 Bruggeman 54

c

Cauchy formula 51
 CCD 113
 characteristic matrix 77
 chi-squared 131
 chromatic aberration 100
 chromaticity coordinates 142
 CMOS 111
 coherent superposition 59
 Commission Internationale de
 l'Éclairage 141
 critical angle of total reflection 20
 critical dimensions 182

d

Danielson-Lanczos lemma 124, 194
 deuterium lamp 97
 DFT 191
 dielectric function 10, 35
 diffraction 21
 discrete Fourier transform 191
 dispersion integrals 49
 downhill simplex algorithm 132, 199
 Drude susceptibility 39
 dynamic resolution 118

e

electromagnetic waves 7
 ellipsometric measurement 85
 ellipsometric parameters 86
 ellipsometry 85
 EMA models 53
 evanescent wave 21
 exponential Cauchy formula 51
 extended Drude model 40
 extraordinary ray 101

f

Fast Fourier transform 121,
 122, 194
 FFT 121, 194
 filling factor 53
 fluorine doped tin oxide 178
 Forouhi and Bloomer 43
 Fourier transform 191, 192
 free spectral range 26, 109
 Fresnel coefficients 19
 Fresnel equations 19
 FTO 178
 full width at half maximum 115

g

ghosts 119
 Glan-Taylor prism 101
 grating efficiency 27, 110
 grating equation 25, 109
 grating function 24
 grating period 23, 109
 grating 107
 groove density 23, 109

h

halogen lamps 94
 harmonic oscillator model 36
 Helmholtz equation 10
 high reflection coating 150
 holographic reflection gratings 34
 holographic transmission
 gratings 29
 HR coating 150
 Huygens-Fresnel principle 14

i

IDFT 191
 incoherent substrates 78
 indium tin oxide 178
 interference 15
 inverse discrete Fourier transform 191
 inverse Fourier transform 192
 ITO 178

k

Kim oscillator 39
 Kramers-Kronig relations 49

l

lamellar reflection gratings 31
 lamellar transmission gratings 27
 layer stack 75
 leakage 126, 193
 lenses 99
 Levenberg-Marquardt algorithm 132, 197
 linear superposition 15

m

Malus' law 102
 Maxwell-Garnett 54
 Maxwell's equations 8
 MBIR 182
 miniaturized spectrometer 107
 mirrors 99
 Model Based Infrared
 Reflectometry 182
 MOSFET 111

n

normal dispersion 38
 numerical aperture 104
 Nyquist frequency 193
 Nyquist-Shannon sampling theorem 193

o

OJL-model 42
 optical fiber 103
 optical retarder 102
 ordinary ray 101
 organic solar cells 180

p

P3HT 180
 PEDOT 180
 pixel dispersion 115
 polarization 13
 polarizer 101
 power spectral distribution 124
 power spectrum 124
 propagating wave model 59, 75

r

Rayleigh criterion for rough surfaces 72
 Rayleigh criterion 115
 reciprocal linear dispersion 109
 reflection law 17
 reflectometric measurement 81
 refractive index 35
 regression analysis 121, 131
 resolving power 110
 roughness 72, 78
 r - t - ϕ model 59, 79

s

scattering 34
 Schott formula 51
 Sellmeier formula 50
 signal-to-noise ratio 118
 silicon on insulator 174
 Snell's law of refraction 18
 SNR 118
 SOI 174
 spectral reflectance measurement 81
 spectral resolution 110, 115
 spectral transmittance measurement 81
 stray light 118
 super-luminescent diode 96

t

Tauc-Lorentz model 41
 thick substrates 69

total reflection 20
transverse electric mode 11
transverse magnetic mode 10
tristimulus values 141

v

vector harmonics 11
vector wave equation 10
volume grating 30

w

wave equation 7
white light LED 95
Wien's law 94
Wollaston prism 102

x

Xenon high pressure arc
lamp 97

