

Subject Index

- Absorption
 - x-ray, 38
- Additivity
 - Bragg, 59
- Adiabatic radius, 25
- Aggregation effect, 59
- Angular deflection
 - multiple, 13
- Angular momentum
 - state
 - high, 54
- Angular scattering, 13
- Angular-momentum
 - conservation, 86
- Antiproton, 37
- Antiproton stopping, 36
- Antiscreening, 46
- Approximation
 - local density, 39
 - local plasma, 39
 - small-angle, 122
 - unitary convolution, 77
- Atomic units, 15
- Auger emission, 45, 54
- Average equilibrium
 - charge, 45
- Backward transport
 - equation, 136
- Barkas effect, 35
- Barkas-Andersen effect, 30, 35, 59
- Bethe formula, 32
- Bethe theory, 23, 30
- Binary collision code, 137
- Binary stopping theory, 51
- Binary theory, 78
- Binding
 - atomic, 40
- Bloch correction, 31, 48
- Bloch formula, 31, 32
- Bloch scaling, 40
- Bloch theory, 31
 - nonrelativistic, 31
 - relativistic, 33
- Bohr criterion, 24
- Bohr formula, 32
- Bohr parameter, 24, 31
- Bohr radius, 15
- Bohr theory, 29
- Bohr velocity, 15
- Bohr-Williams theory, 126
- Born approximation, 23
- Born regime, 48
- Bothe-Landau formula, 100
- Bothe-Landau theory, 127
- Bound target electron, 66
- Bragg additivity, 59
- Bragg curve, 13
- Bragg's rule, 59
- Brandt-Kitagawa
 - potential, 49
- Bremsstrahlung, 34
- Capture
 - electron, 21, 53
- Channeled fraction, 97
- Channeling, 10, 95
- Charge
 - equilibrium
 - average, 45
- Charge exchange, 52
- Charge fraction, 45
- Charge state, 45
 - frozen, 46
 - mean equilibrium, 47
 - pre-equilibrium, 46
- Charge-dependent
 - stopping, 50
- Charge-exchange
 - straggling, 26, 103
- CKT, 81
- Classical, 23, 29
- Classical limit, 49
- Classical orbit, 10
- Classical perturbation
 - theory, 50
- Classical regime, 48
- Classification
 - stopping processes, 20
- Cluster
 - projectile, 7
 - stopping of, 61
- Conservation
 - angular momentum, 86
- Constant
 - Euler, 29
- Constants
 - optical, 38
- Continuous slowing-down, 11
- Conversion
 - units, 16
- Convoy electron, 45
- Correction
 - Z_1^3 , 32
 - Z_1^4 , 31, 32
 - Bloch, 31, 48

- inverse-Bloch, 32, 48
- Mott, 33
- polarization, 23, 50
- projected range, 12
- relativistic, 23
- screening, 59
- shell, 23, 30
 - relativistic, 30
- Coulomb potential
 - partially screened, 20
- Coupling
 - energy loss and deflection, 85
 - recoil and electronic loss, 86
- Cross section
 - power law, 91
 - scattering
 - differential, 13
 - stopping, 8
 - equilibrium, 45
 - frozen charge, 46, 50
 - partial, 50
- csda range, 11, 138
- Cusp electron, 45

- De Broglie wavelength, 24
- Decoupling
 - electronic and nuclear collisions, 85
- Deflection
 - angular
 - multiple, 121
- Density effect
 - Fermi, 34
- Detour factor, 12, 135
- Dielectric function, 38
- dielectric theory, 39
- Differential scattering
 - cross section, 13
- Dipole oscillator
 - strength, 38
- Dressed ion, 45
- Dynamic equilibrium, 45

- Effective charge, 48, 49
- Effective-charge fraction, 48
- Effective-charge ratio, 48
- Elastic scattering, 85
- Electron
 - convoy, 45
 - cusp, 45
- Electron capture, 21, 53
 - nonradiative, 53
- Electron-gas model, 30, 36
 - nonlinear, 80
- Electron-nucleus scattering, 33
- Emission
 - Auger, 45
- Energy
 - per atomic mass unit, 16
 - per nucleon, 16
 - Rudberg, 15
 - specific, 16
- Energy loss
 - by charge exchange, 104
 - maximum, 9
 - mean, 9
 - recoil, 10
- Energy spectrum, 105
- Energy-deposition
 - profile, 12
- Energy-loss processes, 20
- Energy-loss spectrum, 9
 - Glazov theory, 101
 - Landau formula, 101
 - Sigmund-Winterbon formula, 101
- Energy-loss straggling, 9
- Equilibrium
 - dynamic, 45
- Equilibrium charge
 - average, 45
- Equilibrium stopping, 45
- Equilibrium stopping
 - cross section, 45
- Euler's constant, 29
- Excitation
 - projectile, 21, 23, 45, 52
 - target, 21, 23
- Excitation energy
 - mean, 24
- Fermi density effect, 34, 37
- Fermi gas
 - stopping, 65
- Fermi-Teller formula, 65
- Finite-size effect, 34
- Firsov formula, 66, 68
- Firsov model
 - modified, 67
- Fluctuation
 - energy loss, 9
- Forward equation, 105
- Fragmentation reaction, 95
- Frequency
 - resonance, 29
- Frozen charge state, 46
- Frozen-charge stopping
 - cross section, 50
- Function
 - dielectric, 38
- Gaussian
 - range profile, 135
 - spectrum, 9
 - units, 15
- Grazing incidence, 10
- Harmonic-oscillator
 - model, 30, 36
- High-speed regime, 19
- Hydrogenic wave
 - function, 30
- Impact parameter, 10, 97
- Impact plane, 10
- Incidence
 - grazing, 10
- Intra-atomic correlation, 112
- Inverse-Bloch correction, 32, 48
- Ion
 - dressed, 45
 - low energy, 142
- Ionization
 - projectile, 21
 - target, 21

- Ions
 - partially stripped, 103
- I*-value, 39
- Kepler orbit, 24
- Kinetic theory, 30
 - convergent, 81
- Landau formula, 101
- Lateral range, 12
- Legendre polynomial, 122, 127
- Lenz-Jensen screening, 89
- Limit
 - classical, 49
- Lindhard-Finnemann model, 69
- Lindhard-Scharff formula, 67, 68
- Lithium fluoride, 60
- Local-density approximation, 39
- Local-plasma approximation, 39
- Low-speed
 - straggling, 115
- Low-speed ion, 142
- Low-speed regime, 19, 36
- Low-velocity stopping, 65
- Many-body effects, 87
- Mass stopping force, 8
- Mass stopping power, 8
- Maximum energy loss, 9
- Mean energy loss, 7, 9
- Mean equilibrium charge state, 47
- Mean excitation energy, 24
- Model
 - electron gas, 30, 36
 - harmonic oscillator, 30, 36
- Modified Firsov model, 67
- Molecular dynamics, 137
- Molecular gas
 - stopping, 59
- and non-Poisson statistics, 106
- Molecule
 - projectile, 7
 - stopping of, 61
- Molière screening, 89
- Momentum change, 7
- Monte Carlo code, 137
- Mott correction, 33
- Multiple scattering, 123
- Non-equilibrium
 - stopping, 45
- Non-Poisson statistics, 106
- Nonlinear stopping, 70
- Nonradiative electron capture, 53
- Nuclear stopping, 21, 23, 26, 85
- Optical constants, 38
- Orbit
 - classical, 10
 - Kepler, 24
- Orbital
 - Slater, 38
- Oscillator strength
 - dipole, 38
- Oscillator-strength spectrum, 37, 59
- Pair creation, 34
- Partial stopping cross section, 50
- Partially screened
 - Coulomb potential, 20
- Partially-stripped ions, 103
- Path length, 11
- Pathlength, 135
- Pauli principle, 66
- Penetration depth, 12
- Perturbation theory
 - classical, 50
 - quantal, 32, 48
- Phase effect
 - stopping, 59
- Point charge
 - stopping, 29
- Poisson statistics, 9
- Polarization, 23, 24
- Polarization correction, 23, 50
- Polarization effect, 35
- Potential
 - Brandt-Kitagawa, 49
 - interatomic, 86
 - screened-Coulomb, 86
 - screened, 49
- Power-law cross section, 91
- Pre-equilibrium charge state, 46
- Processes
 - energy loss, 20
 - stopping, 20
 - classification, 20
- Profile
 - energy deposition, 12
- Projected range, 12
 - influence of angular deflection, 139
- Projected-range correction, 12
- Projectile
 - cluster, 7
 - molecular, 7
- Projectile excitation, 21, 23, 45, 52
- Projectile ionization, 21
- Projectile screening, 50, 55
- Quantal perturbation theory, 32, 48
- Quantum effects, 86
- Radiation effects, 12
- Radius
 - adiabatic, 25
 - Bohr, 15
 - screening, 88
- Random fraction, 97
- Range, 11, 135
 - along the path, 11

- ccda, 11
- csda, 138
- electronic energy loss, 135
 - influence of angular deflection, 135
 - lateral, 12
 - nuclear energy loss, 135
 - projected, 12
 - Transport equations, 136
 - vector, 12
- Range straggling, 11, 135, 141
 - effect of charge exchange, 135
- Ratio
 - effective charge, 48, 49
- Reaction
 - nuclear, 95
- Recoil loss, 10, 21
- Regime
 - Born, 48
 - classical, 23, 48
 - heavy-ion stopping, 22
 - high speed, 19
 - low speed, 19, 23, 36
 - relativistic, 23, 30
 - speed
 - intermediate, 20
 - ultrarelativistic, 34
 - velocity proportional, 36
- Relativistic Bloch theory, 33
- Resonance frequency, 29
- Restricted nuclear energy loss
 - Thomas-Fermi estimate, 130
- Restricted nuclear stopping, 125
 - Bohr-Williams theory, 126
 - Bothe-Landau theory, 127
- Rutherford scattering, 91
- Rydberg energy, 15
- Satellite
 - x ray, 45
- Scaling
 - Barkas-Andersen effect, 36
 - Bloch, 40
 - differential cross section, 89
 - nuclear stopping, 87
 - restricted nuclear stopping, 128
 - screening radius, 88
 - Thomas-Fermi, 87
- Scattering
 - angular, 13
 - binary
 - elastic, 85
 - elastic, 85
 - Electron-nucleus, 33
 - multiple, 123
 - Rutherford, 91
 - x-ray, 38
- Screening, 23, 45, 46
 - Lenz-Jensen, 89
 - Molière, 89
 - projectile, 50, 55
 - ZBL, 89
- Screening correction, 59
- Screening function, 88
 - Thomas-Fermi, 89
 - universal, 88
- Screening radius, 88
- Semiclassical description, 10
- Shell correction, 23
- Shell correction, 25, 30
 - Bethe theory, 30
 - relativistic, 30
 - straggling
 - classical, 110
- Shima formula, 47
- SI units, 15
- Simulation, 105, 137
 - molecular dynamics, 137
- Skewness
 - energy loss, 9
- Slater orbital, 38
- Small-angle approximation, 122, 128
- Sommerfeld parameter, 23
- Specific energy, 16
- Spectrum
 - energy, 105
 - energy loss, 9
 - oscillator strength, 37, 38, 59
- Statistics
 - non-Poisson, 106
 - Poisson, 9
 - stripped ions, 100
- Statistics
 - particle penetration, 99
- Stopping
 - antiproton, 36
 - at surfaces, 95
 - Bohr, 29
 - by chemical reactions, 21
 - by electromagnetic radiation, 21
 - by nuclear reactions, 21, 95
 - charge-dependent, 50
 - classical, 29
 - electron gas
 - nonlinear, 80
 - electronic, 29
 - equilibrium, 45
 - Fermi-Teller formula, 65
 - Firsov formula, 68
 - impact-parameter dependent, 97
 - in alloys, 59
 - in compounds, 59
 - Lindhard-Scharff formula, 68
 - lithium fluoride, 60
 - low velocity, 65
 - nonequilibrium, 45
 - nuclear, 21, 23, 26, 85
 - restricted, 125
 - scaling, 87

- of clusters, 61
- of molecules, 61
- perturbation theory, 30
- phase effect, 59
- quantal, 30
- Stopping cross section, 8
 - equilibrium, 45
 - frozen-charge, 50
 - partial, 50
- Stopping force, 7
 - collisional, 103
 - equilibrium, 48
 - proton, 48
- Stopping formula
 - Bloch, 31
- Stopping number, 15
- Stopping power, 7
- Stopping processes, 20
- Stopping theory
 - binary, 51, 78
 - Bloch, 31
- Straggling
 - Barkas-Andersen
 - correction, 111
 - Bloch correction, 111
 - Bohr formula, 110
 - Born approximation, 110
 - by charge exchange, 103, 113
 - charge exchange, 26
 - dielectric theory, 111
 - dressed ions, 112
 - electron gas, 113
 - energy loss, 9, 109
 - intra-atomic correlation, 112
 - low speed, 115
 - point charge, 110
 - range, 11, 135, 141
- Straggling parameter, 9, 100
- Stripped ions
 - statistics, 100
- Structure
 - Z_1 , 69
 - Z_2 , 54, 71
- Target
 - thick, 99
 - thin, 99
 - very thick, 99
- Target electron
 - bound, 66
- Target excitation, 21, 23
- Target ionization, 21
- Theory
 - Bethe, 23, 30
 - dielectric, 39
 - kinetic, 30
 - perturbation
 - classical, 50
- Thomas-Fermi
 - estimate
 - charge state, 46
 - estimates, 21
 - model, 21
 - scaling, 87
 - units, 21
- Transport equation, 105
 - backward, 136
 - forward, 105
- Ultrarelativistic regime, 34
- Unitary convolution
 - approximation, 77
- Units
 - atomic, 15
 - gaussian, 15
 - SI, 15
- Universal screening
 - function, 88
- Vavilov formula, 101
- Vector range, 12
- Velocity
 - Bohr, 15
- Velocity-proportional
 - regime, 36
- Wave function
 - hydrogenic, 30
- X-ray absorption, 38
- X-ray satellite, 45
- X-ray scattering, 38
 - Z_1^3 correction, 32
 - Z_1^3 effect, 35
 - Z_1^4 correction, 31, 32
 - Z_2 structure, 40, 54, 71
 - ZBL screening, 89

Author Index

- Ahlen, S. P. 3, 33
Ali, S. P. 69, 71
Allison, S. K. 104
Amaldi, E. 50
Amitay, Z. 62
Amsel, G. 91, 121, 122
Andersen, H. H. 2, 35, 117
Andersen, J. U. 112
Andersen, L. H. 36
Andrews, H. R. 68, 125
Aoki, A. 113
Appleton, B. R. 97
Araujo, L. L. 77
Arbó, D. G. 36
Arista, N. 20, 37, 71, 80
Arista, N. R. 3, 20, 32, 36, 48, 49, 71, 72, 80, 122
Armbruster, P. 123
Arnau, A. 61, 71
Ashley, J. C. 35, 36, 71, 72
Azevedo, G. M. 77, 97

Baer, A. 62
Bak, J. F. 2
Baklitsky, B. E. 69
Balashov, V. V. 114
Barkas, W. H. 2, 35
Baskes, M. I. 87
Bason, F. 68
Battistig, G. 91, 121, 122

Baudin, K. 62
Baur, G. 95
Behar, M. 77, 97
Ben-Hamu, D. 62
Berkowitz, J. 38
Bertulani, C. A. 95
Besenbacher, F. 112, 117
Bethe, H. 3, 19, 66
Bethe, H. A. 110, 121
Betz, H. D. 45, 46
Bhalla, C. P. 68, 69
Bibikov, A. V. 114
Bichsel, H. 30
Bierman, D. J. 68, 69
Biersack, J. P. 2, 3, 30, 49, 88, 90, 91, 125, 137
Biggerstaff, J. A. 97
Billebaud, A. 62
Bimbot, R. 2, 34, 45, 54, 96
Birnbaum, W. 2, 35
Bloch, F. 3, 31, 40
Bluhme, H. 36
Bodrenko, I. V. 114
Bohr, N. 2, 3, 9, 11, 19, 20, 23, 29, 46, 47, 65, 79, 88, 91, 92, 99, 109, 110, 112, 123, 125
Bonderup, E. 3, 111, 112

Bonderup, Ejvind 30, 39
Both, G. 59
Bothe, W. 121
Bøttiger, J. 68
Bradford, J. N. 68, 69
Brandl, D. 62
Brandt, W. 20, 35, 36, 48, 49, 62
Brennan, J. G. 71
Brice, D. K. 69
Bridwell, L. B. 97
Briggs, J. S. 69
Brohm, T. 33
Broude, C. 71
Brown, M. D. 71
Brunelle, A. 45, 62
Burenkov, A. F. 137, 141
Burghalter, P. G. 45

Calera-Rubio, J. 71, 72, 80
Chabot, M. 46, 62, 81
Cheng, K. T. 53
Cheshire, I. M. 68, 69
Chu, W. K. 30, 39, 40, 111
Cowern, N. E. B. 113, 115
Cox, H. L. 59
Cruz, S. A. 69

Datz, S. 97

- Davies, J. A. 68
 Davies, J. C. 38
 Daw, M. S. 87
 de Ferrariis, L. 32
 Dearnaley, G. 68
 DeAzevedo, G. M. 77
 Dedkov, G. V. 87
 Dehmer, J. L. 38, 111
 DelCampo, J. Gomez 97
 Della-Negra, S. 45, 62
 Depauw, J. 45, 62
 Deutsch, C. 3, 20, 50, 81, 145
 Dias, J. F. 77, 97
 Dimitriev, I. S. 66, 68
 Dimitriou, K. 3, 81
 Dittner, P. F. 97
 Dmitriev, I. S. 46
 DosSantos, J. H. R. 77
 Duckworth, H. E. 68, 125
 Dunbar, D. N. F. 59
 Dyer, J. N. 35

 Echenique, P. M. 36, 70–72
 Eckstein, W. 87, 137
 Efken, B. 104, 113
 Eichler, J. 54
 Eisen, F. H. 68, 69
 El-Hoshi, A. H. 68
 Elsener, K. 36
 Engelstein, P. 71
 Eppacher, C. 61
 Eriksson, L. 68
 Esbensen, H. 36
 Eyeberger, L. 122

 Fallavier, M. 62
 Fano, U. 3, 30, 66, 110
 Fastrup, B. 68, 125
 Fateeva, L. N. 66, 68
 Fedotov, S. A. 137, 141
 Feldman, H. 62

 Feng, E. 95
 Feng, J. 95
 Ferleger, V. K. 69
 Fermi, E. 50, 65
 Fettouhi, A. 55, 60, 61
 Finnemann, J. 69, 70
 Firsov, O. B. 2, 19, 66, 67, 88, 91, 114
 Flamm, L. 111
 Fleury, A. 2
 Flyvbjerg, H. 37
 Folger, H. 33
 Freeman, J. M. 113, 115
 Fu, D.-J. 111
 Fukuzawa, F. 113

 Gallaher, D. F. 69, 71
 Gardès, D. 2, 62, 81
 Gauvin, H. 2
 Geissel, H. 33, 34, 40, 45, 48, 54, 68, 95, 96, 123, 125
 Gemmell, D. S. 95
 Gibbons, J. F. 68
 Gillibert, A. 123
 Glazov, L. 53, 104, 113, 114
 Glazov, L. G. 53, 101, 102, 104, 109, 111, 112, 125, 127, 129–131
 Goland, A. N. 97
 Golovchenko, J. A. 97
 Gombas, P. 21
 Goudsmit, S. 121
 Gowda, R. 59
 Grafström, P.
 Grande, P. L. 3, 20, 46, 49, 51, 77, 78, 97, 107
 Gras-Marti, A. 71, 72, 80
 Gravielle, M. S. 36
 Grodzins, L. 46
 Gullikson, E. M. 38

 Haagerup, U. 30, 111
 Haggmark, L. G. 137
 Hahn, D. 104, 113
 Hanson, J. D. 111
 Haruyama, Y. 113
 Hasegawa, M. 97
 Hauser, U. 59, 71
 Heber, O. 62
 Heckman, H. H. 35
 Henke, B. L. 38
 Hill, K. W. 35
 Hilscher, D. 104, 113
 Hoffmann, I. 68
 Hohenberg, P. 70
 Hubert, F. 2
 Hvelplund, P. 36, 68, 111, 114, 116, 125

 Ichihara, A. 54
 ICRU 21, 23, 30, 34–40, 49, 51, 59, 68, 79, 138
 Ikegami, H. 113
 Inokuti, M. 3, 30, 38, 111
 Irnich, H. 33
 Ishihara, T. 46, 47
 Itoh, A. 47
 IUPAP 15, 16

 Jackson, D. 68, 125
 Jackson, J. D. 33, 36
 Jacobsen, K. W. 87
 Jacquet, D. 45
 Jäger, E. 68
 Jensen, J. 62
 Jespersgaard, P. 68

 Kabachnik, N. M. 46, 111
 Kaneko, T. 49, 112, 113, 115, 116
 kansson, P. Hå 62
 Katayama, I. 113
 Katsonis, K. 3, 20, 50, 81, 145

- Kessel'man, V. S. 69
 Kim, Y. K. 53
 Kimura, K. 97
 Kirsch, R. 62
 Kishinevskii, L. M. 67
 Kitagawa, M. 20, 48, 49
 Knipp, J. 19, 47
 Knudsen, H. 2, 36, 97, 117
 Knudson, A. R. 45
 Kohn, W. 70
 Komarov, F. F. 3, 69, 72, 137, 141
 Krause, H. F.
 Krist, T. 125
 Kügler, R. 62
 Kumakhov, M. A. 3, 69, 72
 Kumar, V. H. 69
 Kuno, N. 46, 47, 51
 Kurilenkov, Y. K. 81

 Lamb, W. E. 19
 Land, D. J. 71
 Landau, L. 100, 101, 105
 Lassen, N. O. 2, 46
 Latta, B. M. 71
 LeBeyec, Y. 45, 62
 Lennard, W. N. 68, 125
 Levin, J. 62
 L'Hoir, A. 91, 121, 122
 Lichten, W. 66
 Lifschitz, A. F. 20, 36, 37, 71, 80
 Lin, W. K. 59
 Lindhard, J. 2, 3, 11, 12, 19, 23, 29–31, 33–36, 38, 39, 46, 49, 65–67, 70, 79, 81, 86–88, 91, 92, 95, 96, 101, 111, 112, 114, 136, 137, 142, 145
 Littmark, U. 2, 3, 30, 49, 88, 90, 91
 Livingston, M. S. 110
 Lodhi, A. S. 59

 Mabong, S. 50, 81
 MacDonald, J. R. 68
 MacDonald, R. J. 113
 Magel, A. 33
 Maier, M. 48
 Majima, T. 47
 Mannami, M. 97
 Manoyan, J. M. 59
 Martin, F. W. 97
 Marwick, A. D. 122
 Mason, J. P. 113, 115
 Maynard, G. 3, 20, 46, 50, 81, 145
 McCarthy, R. L. 33, 36
 McGuire, E. J. 30
 Medenwaldt, R. 36
 Mertens, P. 125
 Merzbacher, E. 35
 Meyer, L. 121, 122
 Mikkelsen, H. H. 32, 33, 36, 37, 62
 Mikkelsen, U. 36
 Mikumo, T. 46, 47
 Miller, P. D. 97
 Miraglia, J. E. 36
 Misuno, Y. 137
 Mitchell, I. V. 68
 Mittag, W. 123
 Moak, C. D. 97
 Mohar, M. F. 33
 Molière, G. 121, 122
 Møller, S. P. 36
 Morenzoni, E. 36
 Muiño, R. Díez 61
 Müller-Jahreis, U. 68
 Munzenberg, G. 123

 Nørskov, J. K. 87
 Nagel, D. J. 45
 Nagy, I. 71
 Nankov, N. 48
 Närmann, A. 104

 Nectoux, M. 81
 Neuwirth, W. 59, 71
 Nickel, F. 33
 Nielsen, B. R. 2
 Nielsen, V. 12, 67, 86–88, 91, 92
 Nieminen, R. M. 36, 70–72
 Nikolaev, V. S. 46, 66, 68
 NIST 16
 Northcliffe, L. C. 2, 3, 20, 47, 48

 Oddershede, J. 30, 38, 40
 Ogawa, A. 47
 Ogawa, H. 113
 Olson, H. G. 59
 Olson, R. E. 123
 Ormrod, J. H. 68, 125

 Palik, E. D. 38
 Paludan, K. 36
 Parilis, E. S. 69
 Pathak, A. P. 69–71
 Paul, H. 19
 Pautrat, M. 45
 Pedersen, J. O. P. 36
 Peñalba, M. 71
 Pfützner, M. 33
 Phillips, D. 68, 125
 Pietsch, W. 59, 71
 Poate, J. M. 68, 69
 Poizat, J. C. 62
 Popp, M. 71
 Posselt, M. 137
 Powers, D. 30, 39, 40, 59
 Puska, M. J. 87

 Ratkowski, A. 62
 Ray, E. 62
 Reese, G. 69
 Remillieux, J. 62

- Reynolds, H. K. 59
 Ritchie, R. H. 35, 36, 62, 70–72
 Robinson, J. E. 48
 Robinson, M. T. 137
 Roeckl, E. 33
 Rosner, J. S. 97
 Roudskoi, I. 81
 Rozet, J. P. 47
 Rud, N. 68

 Sørensen, A. H. 48
 Sabin, J. R. 30, 38, 40
 Saito, M. 113
 Sanders, J. B. 90, 105, 137
 Sarrazin, M. 3, 81
 Saunderson, J. L. 121
 Sautter, C. A. 68, 125
 Saxon, R. P. 38
 Scanlon, P. J. 71
 Schall, I. 33
 Schardt, D. 33
 Scharff, M. 2, 11, 12, 19, 23, 38, 39, 67, 86–88, 91, 92, 114, 136, 137, 142
 Scheidenberger, C. 33, 34, 45, 48, 54, 96
 Schilling, R. F. 2
 Schinner, A. 3, 20, 30, 32, 36–38, 48–52, 55, 60, 61, 78, 79, 97, 111, 112, 117
 Schjøtt, H. E. 11, 19, 23, 67, 86, 136, 137, 140, 142
 Schiwietz, G. 3, 20, 37, 46, 49, 51, 77, 78, 97, 107
 Schmidt, K. H. 33
 Schuch, R. H.
 Schumann, R. 111
 Schurr, M. 62
 Schwab, T. 123
 Schwab, W. 33
 Semrad, D. 61
 Sham, L. J. 70
 Sharma, A. 60, 61
 Shen, W. 95
 Shima, K. 46, 47, 51
 Shirai, T. 54
 Sidenius, G. 85
 Sigmund, P. 3, 7, 9, 20, 29, 30, 32, 36–38, 40, 46, 48–53, 55, 60–62, 66, 67, 78, 79, 90, 97, 99, 102–107, 109–114, 117, 121–123, 125, 127, 129–131, 137
 Simons, D. G. 71
 Simonsen, H. 35
 Skoog, R. 125
 Smith, F. M. 2, 35
 Sofield, C. J. 113, 115
 Sørensen, A. H. 3, 29, 31, 33, 34, 36, 48, 79, 81, 111, 112, 145
 Sørensen, H. 35
 Steiner, M. 33
 Stephan, C. 47
 Steward, P. G. 2
 Stöhlker, Th. 33
 Sugai, I. 113
 Sümmerner, K. 33
 Symon, K. 101–103, 105

 T., Baer. 111
 Tandon, P. N. 71
 Tawara, H. 46, 47, 51
 Teller, E. 19, 47, 65
 Teplova, Ya. A. 66, 68
 Thomas, J. P. 62
 Thomsen, P. V. 12, 67, 86
 Thorn, C. E. 97
 Thwaites, D. I. 59
 Tilinin, I. S. 67
 Titeica, S. 111
 Tofterup, A. L. 30
 Tomaschko, C. 62
 Torrens, I. M. 137
 Tosaki, M. 113
 Tschalär, C. 103
 Tsuchida, H. 47
 Turkenburg, W. C. 68, 69
 Uggerhøj, E. 36
 Vager, Z. 62
 Valdes, J. E. 122
 Vane, C. R.
 Vargas, C. 69
 Vavilov, P. V. 101
 Vernhet, D. 47
 Vieira, D. J. 33
 Voit, H. 62
 Vollmer, O. 113
 Voss, B. 33

 Walker, R. B. 68
 Wallace, R. 2
 Wang, B. 95
 Ward, D. 68, 125
 Weber, M. 33
 Wegner, H. E. 97
 Weick, H. 34, 45, 48, 54, 96
 Wenzel, W. A. 59
 Whaling, W. 59
 Whitton, J. L. 71
 Williams, E. J. 123, 125
 Wilson, W. D. 137
 Winter, H. 97
 Winterbon, K. B. 68, 90, 101, 103, 105, 113, 121–123, 137
 Winther, Aa. 30, 39, 66, 96
 Wollnik, H. 123
 Worm, T. 36
 Wüstefeld, G. 104, 113
 Yamamura, Y. 137

- | | | |
|------------------------------|-----------------|--|
| Yamanouchi, M. 46, 47,
51 | Yoshida, K. 113 | Ziegler, J. F. 2, 3, 30,
49, 59, 88, 90, 91 |
| Yang, Q. 112, 113 | Zajfman, D. 62 | Zwicknagel, G. 3, 20,
50, 81, 145 |
| Yarlagadda, B. S. 48 | Zhan, W. 95 | |
| Yogo, A. 47 | Zhu, Y. 95 | |

Springer Tracts in Modern Physics

- 165 **Path Integral Quantization and Stochastic Quantization**
By M. Masujima 2000. 0 figs. XII, 282 pages
- 166 **Probing the Quantum Vacuum**
Perturbative Effective Action Approach in Quantum Electrodynamics and its Application
By W. Dittrich and H. Gies 2000. 16 figs. XI, 241 pages
- 167 **Photoelectric Properties and Applications of Low-Mobility Semiconductors**
By R. Könenkamp 2000. 57 figs. VIII, 100 pages
- 168 **Deep Inelastic Positron-Proton Scattering in the High-Momentum-Transfer Regime of HERA**
By U.F. Katz 2000. 96 figs. VIII, 237 pages
- 169 **Semiconductor Cavity Quantum Electrodynamics**
By Y. Yamamoto, T. Tassone, H. Cao 2000. 67 figs. VIII, 154 pages
- 170 **d-d Excitations in Transition-Metal Oxides**
A Spin-Polarized Electron Energy-Loss Spectroscopy (SPEELS) Study
By B. Fromme 2001. 53 figs. XII, 143 pages
- 171 **High- T_c Superconductors for Magnet and Energy Technology**
By B. R. Lehndorff 2001. 139 figs. XII, 209 pages
- 172 **Dissipative Quantum Chaos and Decoherence**
By D. Braun 2001. 22 figs. XI, 132 pages
- 173 **Quantum Information**
An Introduction to Basic Theoretical Concepts and Experiments
By G. Alber, T. Beth, M. Horodecki, P. Horodecki, R. Horodecki, M. Rötteler, H. Weinfurter, R. Werner, and A. Zeilinger 2001. 60 figs. XI, 216 pages
- 174 **Superconductor/Semiconductor Junctions**
By Thomas Schäpers 2001. 91 figs. IX, 145 pages
- 175 **Ion-Induced Electron Emission from Crystalline Solids**
By Hiroshi Kudo 2002. 85 figs. IX, 161 pages
- 176 **Infrared Spectroscopy of Molecular Clusters**
An Introduction to Intermolecular Forces
By Martina Havenith 2002. 33 figs. VIII, 120 pages
- 177 **Applied Asymptotic Expansions in Momenta and Masses**
By Vladimir A. Smirnov 2002. 52 figs. IX, 263 pages
- 178 **Capillary Surfaces**
Shape – Stability – Dynamics, in Particular Under Weightlessness
By Dieter Langbein 2002. 182 figs. XVIII, 364 pages
- 179 **Anomalous X-ray Scattering for Materials Characterization**
Atomic-Scale Structure Determination
By Yoshio Waseda 2002. 132 figs. XIV, 214 pages
- 180 **Coverings of Discrete Quasiperiodic Sets**
Theory and Applications to Quasicrystals
Edited by P. Kramer and Z. Papadopolos 2002. 128 figs., XIV, 274 pages
- 181 **Emulsion Science**
Basic Principles. An Overview
By J. Bibette, F. Leal-Calderon, V. Schmitt, and P. Poulin 2002. 50 figs., IX, 140 pages
- 182 **Transmission Electron Microscopy of Semiconductor Nanostructures**
An Analysis of Composition and Strain State
By A. Rosenauer 2003. 136 figs., XII, 238 pages
- 183 **Transverse Patterns in Nonlinear Optical Resonators**
By K. Staliūnas, V. J. Sánchez-Morcillo 2003. 132 figs., XII, 226 pages

Springer Tracts in Modern Physics

- 184 **Statistical Physics and Economics**
Concepts, Tools and Applications
By M. Schulz 2003. 54 figs., XII, 244 pages
- 185 **Electronic Defect States in Alkali Halides**
Effects of Interaction with Molecular Ions
By V. Dierolf 2003. 80 figs., XII, 196 pages
- 186 **Electron-Beam Interactions with Solids**
Application of the Monte Carlo Method to Electron Scattering Problems
By M. Dapor 2003. 27 figs., X, 110 pages
- 187 **High-Field Transport in Semiconductor Superlattices**
By K. Leo 2003. 164 figs., XIV, 240 pages
- 188 **Transverse Pattern Formation in Photorefractive Optics**
By C. Denz, M. Schwab, and C. Weillnau 2003. 143 figs., XVIII, 331 pages
- 189 **Spatio-Temporal Dynamics and Quantum Fluctuations in Semiconductor Lasers**
By O. Hess, E. Gehrige 2003. 91 figs., XIV, 232 pages
- 190 **Neutrino Mass**
Edited by G. Altarelli, K. Winter 2003. 118 figs., XII, 248 pages
- 191 **Spin-orbit Coupling Effects in Two-dimensional Electron and Hole Systems**
By R. Winkler 2003. 66 figs., XII, 224 pages
- 192 **Electronic Quantum Transport in Mesoscopic Semiconductor Structures**
By T. Ihn 2003. 90 figs., XII, 280 pages
- 193 **Spinning Particles – Semiclassics and Spectral Statistics**
By S. Keppeler 2003. 15 figs., X, 190 pages
- 194 **Light Emitting Silicon for Microphotonics**
By S. Ossicini, L. Pavesi, and F. Priolo 2003. 206 figs., XII, 284 pages
- 195 **Uncovering CP Violation**
Experimental Clarification in the Neutral K Meson and B Meson Systems
By K. Kleinknecht 2003. 67 figs., XII, 144 pages
- 196 **Ising-type Antiferromagnets**
Model Systems in Statistical Physics and in the Magnetism of Exchange Bias
By C. Binek 2003. 52 figs., X, 120 pages
- 197 **Electroweak Processes in External Electromagnetic Fields**
By A. Kuznetsov and N. Mikheev 2003. 24 figs., XII, 136 pages
- 198 **Electroweak Symmetry Breaking**
The Bottom-Up Approach
By W. Kilian 2003. 25 figs., X, 128 pages
- 199 **X-Ray Diffuse Scattering from Self-Organized Mesoscopic Semiconductor Structures**
By M. Schmidbauer 2003. 102 figs., X, 204 pages
- 200 **Compton Scattering**
Investigating the Structure of the Nucleon with Real Photons
By F. Wissmann 2003. 68 figs., VIII, 142 pages
- 201 **Heavy Quark Effective Theory**
By A. Grozin 2004. 72 figs., X, 213 pages
- 202 **Theory of Unconventional Superconductors**
By D. Manske 2004. 84 figs., XII, 228 pages
- 203 **Effective Field Theories in Flavour Physics**
By T. Mannel 2004. approx. 100 figs., 200 pages
- 204 **Stopping of Heavy Ions**
A Theoretical Approach
By P. Sigmund 2004. 43 figs., XIV, 157 pages