

Contents

New Data and Updates for several Semiconductors with Chalcopyrite Structure,
for several II-VI Compounds and diluted magnetic IV-VI Compounds

Systematics of Semiconductor Data see LB III/44A

Index of Substances see LB III/44A

List of Symbols..... see LB III/44A

Conversion Factors..... see LB III/44A

New Data and Updates for several Semiconductors with Chalcopyrite Structure,
for several II-VI Compounds and diluted magnetic IV-VI Compounds 1

AgGaS₂: force constants (*M. Rusu*) 1

AgGaS₂: complex refractive index (*M. Rusu*)..... 2

AgGaSe₂: thermal diffusivity (*M. Rusu*)..... 3

AgGaSe₂: force constants (*M. Rusu*)..... 4

AgGaTe₂: thermal diffusivity (*M. Rusu*)..... 5

AgGaTe₂: force constants (*M. Rusu*) 6

AgInS₂: force constants (*M. Rusu*)..... 7

AgInSe₂: force constants (*M. Rusu*)..... 8

AgInSe₂: extinction coefficient (*M. Rusu*)..... 9

AgInTe₂: force constants (*M. Rusu*)..... 10

AgInTe₂: extinction coefficient (*M. Rusu*)..... 11

CuAlS₂: total energy (*M. Rusu*) 12

CuAlS₂: force constants (*M. Rusu*) 14

CuAlSe₂: complex refractive index (*M. Rusu*)..... 15

CuAlSe₂: total energy (*M. Rusu*)..... 16

CuAlSe₂: force constants (*M. Rusu*)..... 18

CuAlSe₂: extinction coefficient (*M. Rusu*)..... 19

CuAlTe₂: total energy (*M. Rusu*) 21

CdGeAs₂: force constants (*M. Rusu*) 23

CdGeP₂: total energy (*M. Rusu*)..... 24

CdGeP₂: force constants (*M. Rusu*)..... 25

CdSiP₂: total energy (*M. Rusu*)..... 26

CdSiP₂: force constants (*M. Rusu*) 27

CdSnP ₂ : force constants (<i>M. Rusu</i>)	28
CdSiP ₂ : thermal diffusivity (<i>M. Rusu</i>)	29
CuGaS ₂ : force constants (<i>M. Rusu</i>)	30
CuGaS ₂ : complex refractive index (<i>M. Rusu</i>)	31
CuGaSe ₂ : total energy (<i>M. Rusu</i>)	32
CuGaSe ₂ : force constants (<i>M. Rusu</i>)	34
CuGaSe ₂ : extinction coefficient (<i>M. Rusu</i>)	35
CuGaTe ₂ : force constants (<i>M. Rusu</i>)	37
CuGaTe ₂ : extinction coefficient (<i>M. Rusu</i>)	38
CuInS ₂ : thermal diffusivity (<i>M. Rusu</i>)	39
CuInS ₂ : force constants (<i>M. Rusu</i>)	40
CuInS ₂ : complex refractive index (<i>M. Rusu</i>)	41
CuInSe ₂ : total energy (<i>M. Rusu</i>)	42
CuInSe ₂ : force constants (<i>M. Rusu</i>)	44
CuInSe ₂ : extinction coefficient (<i>M. Rusu</i>)	45
CuInTe ₂ : force constants (<i>M. Rusu</i>)	47
Pb _{1-x} Eu _x Te: energy gap (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	48
Pb _{1-x} Eu _x Te: refractive index, absorption coefficient (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	49
Sn _{1-x} Eu _x Se: crystal structure (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	51
Sn _{1-x} Eu _x Se: exchange integrals (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	52
Sn _{1-x} Eu _x Se: magnetization (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	53
Sn _{1-x} Eu _x Se: g-factor of magnetic ions (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	54
Sn _{1-x} Eu _x Te: lattice parameter (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	55
Sn _{1-x} Eu _x Te: transmission, absorption coefficient (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	56
Sn _{1-x} Eu _x Te: mobility (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	58
Ga _{1-x} Mn _x S: magnetic phase transition, transition temperature, critical exponents (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	59
Ge _{1-x} Mn _x Te: band structure, density of states (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	61
Ge _{1-x} Mn _x Te: photoemission data (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	63
Ge _{1-x} Mn _x Te: Curie-Weiss temperature (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	64
Ge _{1-x} Mn _x Te: magnetization (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	65
Ge _{1-x} Mn _x Te: g-factor of magnetic ions (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	67
ZnGeP ₂ : force constants (<i>M. Rusu</i>)	68
Hg _{1-x} Mn _x Te: band gap (<i>J. Chu</i>)	69
HgO: phase transitions (<i>J. Chu</i>)	70
β-HgS, zincblende modification: energy bands (<i>J. Chu</i>)	72
β-HgS, zincblende modification: energy gap (<i>J. Chu</i>)	75
β-HgS, zincblende modification: spin-orbit splitting, Dresselhaus-spin-splitting (<i>J. Chu</i>)	76
HgS: bulk modulus (<i>J. Chu</i>)	77
HgSe: phase transition (<i>J. Chu</i>)	78
HgSe, zincblende modification: energy bands (<i>J. Chu</i>)	80
HgSe: energy gap (<i>J. Chu</i>)	82
HgSe: spin-orbit splitting, Dresselhaus-spin-splitting (<i>J. Chu</i>)	83
HgTe: phase transition (<i>J. Chu</i>)	84
HgTe: energy bands (<i>J. Chu</i>)	85
HgTe: energy gap (<i>J. Chu</i>)	87
HgTe: spin-orbit splitting, Dresselhaus-spin-splitting (<i>J. Chu</i>)	88
Pb _{1-x} Mn _x Se: resistivity, hole mobility (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	89
Pb _{1-x} Mn _x Se: magnetoresistance, phase coherence length (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	91
Pb _{1-x} Mn _x Te: energy gaps (<i>T. Dietl, W.D. Dobrowolski, T. Story</i>)	92
ZnO: phase transition (<i>D. Strauch</i>)	93
ZnO: enthalpy, heat capacity, thermal conductivity (<i>D. Strauch</i>)	100
ZnO: thermal expansion (<i>D. Strauch</i>)	104
ZnO: lattice parameters (<i>D. Strauch</i>)	106

ZnO: Debye-Waller factor, temperature factor (<i>D. Strauch</i>)	120
ZnO: phonon dispersion curves, phonon density of states (<i>D. Strauch</i>)	122
ZnO: elastic constants, sound velocities (<i>D. Strauch</i>)	128
ZnO: phonon frequencies, mode-Grüneisen parameters (<i>D. Strauch</i>)	136
ZnO: phonon line shift and width (<i>D. Strauch</i>)	145
ZnO: bulk modulus, compressibility (<i>D. Strauch</i>)	151
ZnO: Young's modulus (<i>D. Strauch</i>)	161
ZnO: dielectric constant, effective charge (<i>D. Strauch</i>)	162
ZnO: piezoelectric coefficients (<i>D. Strauch</i>)	167
ZnS: phase transitions (<i>D. Strauch</i>)	169
ZnS: equation of state (<i>D. Strauch</i>)	174
ZnS: enthalpy, thermal conductivity (<i>D. Strauch</i>)	175
ZnS: thermal expansion (<i>D. Strauch</i>)	176
ZnS: lattice parameters (<i>D. Strauch</i>)	178
ZnS: phonon dispersion curves, phonon spectra (<i>D. Strauch</i>)	184
ZnS: elastic constants, internal-strain parameter (<i>D. Strauch</i>)	187
ZnS: bulk modulus, compressibility (<i>D. Strauch</i>)	191
ZnS: dielectric constants, effective charge (<i>D. Strauch</i>)	197
ZnS: phonon frequencies, Grüneisen parameters (<i>D. Strauch</i>)	199
ZnS: piezoelectric constants (<i>D. Strauch</i>)	203
ZnSe: phase transitions (<i>D. Strauch</i>)	204
ZnSe: thermal conductivity, heat capacity (<i>D. Strauch</i>)	210
ZnSe: lattice parameters, thermal expansion (<i>D. Strauch</i>)	211
ZnSe: Debye-Waller factor, temperature factor (<i>D. Strauch</i>)	216
ZnSe: phonon dispersion curves, phonon spectra (<i>D. Strauch</i>)	218
ZnSe: elastic constants, internal strain parameter (<i>D. Strauch</i>)	220
ZnSe: bulk modulus, compressibility (<i>D. Strauch</i>)	223
ZnSe: dielectric constant, effective charge (<i>D. Strauch</i>)	229
ZnSe: phonon frequencies, Grüneisen parameters, anharmonic frequency shift and width (<i>D. Strauch</i>)	231
ZnTe: phase transitions (<i>D. Strauch</i>)	237
ZnTe: thermal expansion (<i>D. Strauch</i>)	240
ZnTe: lattice parameters (<i>D. Strauch</i>)	241
ZnTe: Debye-Waller factor, temperature factor (<i>D. Strauch</i>)	244
ZnTe: phonon line shift and width (<i>D. Strauch</i>)	245
ZnTe: phonon dispersion curves, phonon spectra (<i>D. Strauch</i>)	246
ZnTe: phonon frequencies, mode-Grüneisen parameters (<i>D. Strauch</i>)	249
ZnTe: elastic constants, internal strain parameter (<i>D. Strauch</i>)	255
ZnTe: bulk modulus, compressibility (<i>D. Strauch</i>)	257
ZnTe: dielectric constants, effective charges (<i>D. Strauch</i>)	260