boron (B)

general characterization
structure, chemical bond, general remarks
structure of α-rhombohedral boron
structure of β-rhombohedral boron
structure of tetragonal boron
structure of amorphous boron
liquid, metallic and quasicrystalline phases
other modifications of boron
electronic properties of boron-rich semiconductors, general remarks
electronic properties of icosahedral B$_{12}$ clusters
values of charge density associated with various bonds, α-rhombohedral boron
energy gap, α-rhombohedral boron
band structure calculations, α-rhombohedral boron
energy levels for some symmetry points, α-rhombohedral boron
transition energies, effective mass and related electronic parameters, α-rhombohedral boron
band structure, β-rhombohedral boron
energy gap, β-rhombohedral boron
temperature and pressure dependence of the energy gap, β-rhombohedral boron
photoluminescence and Auger effect, β-rhombohedral boron
interband critical points, β-rhombohedral boron
transition energies obtained by various methods, β-rhombohedral boron
$g$-factor, electron spin and paramagnetic resonances, β-rhombohedral boron
effective masses, β-rhombohedral boron
electronic properties of tetragonal boron
electronic properties of amorphous boron
impurities, general properties
defects, general properties
impurities in α-rhombohedral boron
impurities in β-rhombohedral boron, general properties
traps in β-rhombohedral boron
ionization energies of shallow energy levels, β-rhombohedral boron
electron trap ionization energies, β-rhombohedral boron
phonon involved in trap generation, β-rhombohedral boron
intrinsic defects in β-rhombohedral boron, general remarks
substitutional impurities in β-rhombohedral boron, general remarks
interstitial impurities, voids, β-rhombohedral boron
interstitial accommodation of atoms in β-rhombohedral boron, occupancy of sites, carrier type
further data on interstitials, \(\beta\)-rhombohedral boron
Curie constant and related parameters, \(\beta\)-rhombohedral boron
isomer shift and quadrupole splitting, \(\beta\)-rhombohedral boron
electron paramagnetic resonance, \(g\)-factor, \(\beta\)-rhombohedral boron
energy levels derived from photoconductivity, \(\beta\)-rhombohedral boron
surface reactions
\(\text{Mössbauer and EPR data, amorphous boron}\)
lattice vibrations in boron, general literature
vibrational properties of the \(\text{B}_{12}\) icosahedron
lattice parameters and related data, \(\alpha\)-rhombohedral boron
pressure dependence of lattice parameters, bulk modulus, \(\alpha\)-rhombohedral boron
optical phonons, vibrational data, \(\alpha\)-rhombohedral boron
one-phonon and multiple phonon processes, \(\alpha\)-rhombohedral boron
Raman active phonons
force constants, acoustic wave velocities, \(\alpha\)-rhombohedral boron
lattice parameters and related data, \(\beta\)-rhombohedral boron
pressure dependence of lattice parameters, bulk modulus, thermal expansion, \(\beta\)-rhombohedral boron
optical phonons, ir-active lattice vibrations, \(\beta\)-rhombohedral boron
Raman-active phonons, \(\beta\)-rhombohedral boron
elastic constants and compliances, \(\beta\)-rhombohedral boron
further phonon properties, \(\beta\)-rhombohedral boron
Youngs and shear moduli, compressibility, sound velocity, \(\beta\)-rhombohedral boron
lattice parameters of doped \(\beta\)-rhombohedral boron
phonon frequencies of doped \(\beta\)-rhombohedral boron
vibrational ir-spectra, \(\beta\)-rhombohedral boron
figures and references to IR and Raman spectra, \(\beta\)-rhombohedral boron
lattice parameters of \(\alpha\)-and \(\beta\)-tetragonal boron
absorption and Raman spectra in amorphous boron
Youngs and shear moduli, sound velocity, amorphous boron
transport properties in \(\alpha\)-rhombohedral boron
transport properties in \(\beta\)-rhombohedral boron, general considerations
dynamical conductivity, \(\beta\)-rhombohedral boron
dc conductivity, \(\beta\)-rhombohedral boron
figures and references to the electrical conductivity in \(\beta\)-rhombohedral boron
hole concentration, Hall coefficient, \(\beta\)-rhombohedral boron
carrier mobilities and drift velocities, \(\beta\)-rhombohedral boron
Seebeck coefficient, \(\beta\)-rhombohedral boron
electrical properties of polycrystalline boron wafers
magneto-, elasto- and piezotransport parameters, \( \beta \)-rhombohedral boron
figures to transport properties of \( \beta \)-rhombohedral boron
electrical properties of amorphous boron
Seebeck and Poole-Frenkel effect in amorphous boron
switching times in amorphous boron
Schottky barriers between amorphous boron and gold electrodes
figures and references to optical properties of boron, general
optical properties of \( \alpha \)-rhombohedral boron
optical spectra and dielectric constant, \( \beta \)-rhombohedral boron
photoeffects, work function and related parameters, \( \beta \)-rhombohedral boron
photoconductivity in \( \beta \)-rhombohedral boron
further data obtained from photoconductivity, \( \beta \)-rhombohedral boron
carrier lifetimes, thermal activation energies and related data, \( \beta \)-rhombohedral boron
figures and references to photoconductivity, \( \beta \)-rhombohedral boron
optical properties of amorphous boron
transformation and melting temperatures
Debye temperature, heat capacity, thermal conductivity, density, \( \alpha \)-rhombohedral boron
magnetic susceptibility, \( \alpha \)-rhombohedral boron
thermal diffusivity and conductivity, \( \beta \)-rhombohedral boron
density, Debye temperature, heat capacity, \( \beta \)-rhombohedral boron
magnetic susceptibility, \( \beta \)-rhombohedral boron
sound velocity, \( \beta \)-rhombohedral boron
hardness, \( \beta \)-rhombohedral boron
internal friction, shear modulus, \( \beta \)-rhombohedral boron
sound attenuation, phonon mean free path, \( \beta \)-rhombohedral boron
internal friction, thermal conductivity, amorphous boron
density, heat capacity, amorphous boron
magnetic susceptibility, amorphous boron
phosphorus (P)

structure, chemical bond
band structure, general aspects
energy gap
deformation potential
band-band exciton transitions and exciton binding energy
binding energies of valence band states
energy of critical points in the valence band structure
core level energies
plasmon excitation energy
effective masses
activation and excitation energies of impurities
lattice energies and structural parameters
thermal expansion
valence force constants
sound velocities
second order elastic moduli
bulk moduli and compressibility
phonon dispersion
optical phonon frequencies on the Γ-point
Grüneisen parameter
electrical resistivity, electrical and thermal conductivity
superconducting transition temperature
carrier concentration, Hall coefficient, Hall voltage and Hall mobilities
relaxation times, lifetimes, electron-phonon coupling constant
magnetoresistance, Seebeck coefficient
optical spectra
X-ray spectra
Raman and Brillouin spectra
dielectric constants
Debye temperature, heat capacity, density, melting point
arsenic (As)
structure, chemical bond
band structure, general
energy gap and band overlap energy
intervalance band and Fermi energies
interband transition and spin splitting energies
effective masses, g-factor
impurities and defect states
lattice parameters, thermal expansion, other structural parameters
data on lattice vibrations
sound velocities, elastic constants
compressibility, bulk and Young's modulus, Grüneisen parameter
carrier concentration, electrical conductivity and mobilities
magnetoresistance
Seebeck and Peltier coefficients, magneto-thermoelectric power
superconducting transition temperature
optical spectra
optical constants, dielectric constant
thermal conductivity
magnetic susceptibility, electron spin resonance
Debye temperature, heat capacity, density, melting point
antimony (Sb)

- structure, chemical bond
- band structure, energy gap
- further data characterizing the band structure
- intra- and interband energies
- effective masses, $g$-factor, spin-splitting factor
- deformation potentials
- impurity data
- lattice and structural parameters, thermal expansion
- phonon dispersion relations and wavenumbers, sound velocities
- elastic constants and related properties
- transport mechanism, carrier concentrations and mobilities
- Hall coefficient, Seebeck coefficient
- scattering frequencies, mean free path
- resistivity, magnetoresistivity
- superconducting transition temperature
- optical properties, dielectric constant
- thermal conductivity
- magnetic susceptibility
- Debye temperature, heat capacity, density, melting point
bismuth (Bi)
crystal structure, chemical bond
band structure, general
energy gap and related energies
interband transition energies
effective masses
g-factors, spin splitting factor
deformation potentials
impurities
lattice and structural parameters, thermal expansion, atomic weight and volume
phonon dispersion relations and wavenumbers
sound velocities, elastic constants, magnetoacoustic attenuation
compressibility, Young's modulus, bulk modulus, Grüneisen parameters
transport mechanism, general
carrier concentrations and mobilities
resistivity and magnetoresistivity
Hall, Seebeck and Nernst-Ettingshausen coefficients
scattering times, mean free path, quantum size period length, plasmon energy
piezo- and elasto-resistance
superconducting transition temperature
optical properties, dielectric constants
thermal conductivity
magnetic susceptibility, magnetostriction, Knight shift
Debye temperature, heat capacity, density, melting point
Bi$_{1-x}$Sb$_x$

crystal structure, chemical bond
band structure, general
energy gaps
further parameters characterizing the band structure
effective masses, anisotropy parameter
spin splitting factor
impurity states
lattice parameters
phonon dispersion relations, sound velocities, elastic constants
compressibility, Young's modulus, Debye temperature
transport mechanism, resistivity and conductivity
carrier concentrations and mobilities
relaxation time, magnetoresistance
Hall, Seebeck and related coefficients
optical properties, dielectric constant
thermal conductivity
magnetic properties
sulfur (S)
crystal structure, general
crystal structure, lattice and molecular parameters, orthorhombic $\alpha$-modification
crystal structure, lattice and molecular parameters, monoclinic $\beta$-modification
crystal structure, lattice and molecular parameters, monoclinic $\gamma$-modification
crystal structure, lattice and molecular parameters, rhombohedral $\rho$-modification
crystal structure, lattice and molecular parameters, polymeric sulfur $S_x$
crystal structure, lattice and molecular parameters, orthorhombic lattices of $S_{12}$, $S_{18}$ and $S_{20}$ molecules
crystal structure, lattice and molecular parameters, monoclinic lattices of $S_7$ and $S_{10}$ molecules
phase transitions under pressure
band structure, general, orthorhombic $\alpha$-modification
energy gap and related energies, orthorhombic $\alpha$-modification
melting point and dissociation temperatures, all modifications
phase transition data
phonon properties, general, orthorhombic $\alpha$-modification
phonon properties of $\beta$-monoclinic and $S_{12}$-orthorhombic modification
phonon wavenumbers, orthorhombic $\alpha$-modification
phonon modes of rhombohedral, monoclinic and $S_{18}$- and $S_{20}$-orthorhombic modifications
elastic moduli, mode Grüneisen parameters, sound attenuation, orthorhombic $\alpha$-modification
compressibility, elastooptic properties, orthorhombic $\alpha$-modification
thermal expansion, orthorhombic $\alpha$-modification
Debye temperature, heat capacity, density, all modifications
enthalpies of sublimation, conversion and fusion, entropy of disorder, all modifications
self diffusion, orthorhombic $\alpha$-modification
dislocations, crystal growth, orthorhombic $\alpha$-modification
transport properties, general, orthorhombic $\alpha$-modification
electrical conductivity, carrier mobilities, orthorhombic $\alpha$-modification
polaron data, orthorhombic $\alpha$-modification
hole and electron traps, carrier lifetimes, orthorhombic $\alpha$-modification
piezoresistance, orthorhombic $\alpha$-modification
optical spectra, orthorhombic $\alpha$-modification
birefringence, orthorhombic $\alpha$-modification
photoluminescence, photoconductivity, orthorhombic $\alpha$-modification
dielectric constant, refractive index, orthorhombic $\alpha$-modification
selenium (Se)
crystal structure, general
crystal structure, lattice and cell parameters, trigonal Se
crystal structure, lattice and cell parameters, monoclinic selenium (α, β, γ)
crystal structure, lattice and cell parameters, rhombohedral and orthorhombic selenium
phase transitions under pressure
band structure, trigonal Se
band structure, monoclinic Se
electronic properties of rhombohedral and orthorhombic selenium
energy gaps, trigonal Se
energy gap, monoclinic Se
interband transition energies, exciton binding energy, trigonal Se
effective masses, trigonal Se
deformation potentials, trigonal Se
impurities and defects
lattice properties, thermal expansion, trigonal Se
phonon dispersion curves, trigonal Se
phonon wavenumbers, Grüneisen parameters, trigonal Se
phonon wavenumbers, monoclinic Se
phonon wavenumbers, rhombohedral and orthorhombic selenium
effective charge, polaron coupling, Raman cross section, trigonal Se
sound velocity, trigonal Se
elastic moduli, trigonal Se
compression and bulk moduli, trigonal Se
piezoelectric coefficients, trigonal Se
Debye temperature, heat capacity, density, melting point, trigonal Se
Debye temperature, heat capacity, density, monoclinic Se
enthalpies and entropies, trigonal Se
vacancies and dislocations, crystal growth, trigonal Se
conversion enthalpy and energy, monoclinic to trigonal Se
crystal growth, monoclinic Se
transport mechanism, general, trigonal Se
transport properties, monoclinic Se
electrical conductivity, trigonal Se
carrier concentration and mobilities, trigonal Se
magneto-resistance, piezo-resistance, trigonal Se
thermoelectric power, trigonal Se
recombination, trapping, trigonal Se
thermal conductivity, trigonal Se
photoconductivity, trigonal Se
optical spectra, Raman spectra, trigonal Se
optical spectra, Raman spectra, monoclinic Se
optical absorption, plasma frequency, trigonal Se
dielectric constants, refractive index, trigonal Se
dielectric constant, refractive index, monoclinic Se
nonlinear optics, trigonal Se
magnetic properties, trigonal Se
tellurium (Te)

crystal structure, cell parameters
band structure
energy gap
further energy parameters, Fermi energy
effective masses
near-gap structures of energy bands
acceptor states
segregation and precipitation of impurities
phonon dispersion relations
phonon frequencies
sound velocities and sound absorption
elastic moduli
compressibilities
thermal expansion
piezoelectric coefficients
Debye temperature, heat capacity, density, melting point
heat of fusion and vaporization, vapor pressure
plastic deformation
transport mechanism
intrinsic transport properties
magnetoresistance
extrinsic transport properties
piezoresistance
relaxation times of transport phenomena
thermoelectric power
thermal conductivity
superconductivity
optical constants
further optical properties
dielectric constants
Se$_x$Te$_{1-x}$

general characterization
electronic properties
crystal structure
phonon dispersion and wavenumbers
elastic moduli, compressibility
piezoelectric coefficients
melting point, density and related properties
crystal growth
transport properties, general
conductivity, Hall effect, Seebeck coefficient
mobility, magnetoconductivity
piezoresistivity
optical spectra
dielectric constant
nonlinear optics
$\text{IA}_x\text{IB}_y$ compounds

- general characterization
- crystal structure of $\text{IA-IB}_2$ compounds
- crystal structure of $\text{IA-IB}_5$ compounds
- crystal structure of $\text{IA}_2\text{-IB}_3$ compounds
- crystal structure $\text{IA}_3\text{-IB}_7$ compounds
CsAu

crystal structure, chemical bond
band structure
energy gap, interband transition energies
transport properties
further properties
RbAu

crystal structure, chemical bond
band structure
transport and further properties
I\textsubscript{x}-V\textsubscript{y} compounds

crystal structure of I\textsubscript{3}-V compounds
lattice parameters of I\textsubscript{3}-V compounds
crystal structure, lattice parameters of I\textsubscript{x}I\textsubscript{y}-V compounds
chemical bond
NaSb, KsB, RbSb, CsSb
  crystal structure, lattice parameters
  semiconducting properties
  melting points
Li₃Sb, Li₃Bi

crystal structure, chemical bond
physical properties
Na$_3$Sb

crystal structure, chemical bond
band structure, energy gap
transport and further properties
$K_3Sb$

crystal structure, chemical bond
band structure, energy gap
interband transition energies
lattice, transport and further properties
Rb$_3$Sb

crystal structure, chemical bond
band structure, energy gap
transport, optical and further properties
Cs$_3$Sb

crystal structure, chemical bond
band structure and energies, impurity levels
transport and further properties
Rb$_3$Bi, Cs$_3$Bi

crystal structure, chemical bond

physical properties
K$_3$Bi, Na$_3$Bi

crystal structure, chemical bond
\( \text{Na}_2\text{KSb} \)

crystal structure, chemical bond
band structure and energies, impurity levels
lattice and transport properties
optical properties
K$_2$CsSb

crystal structure, lattice parameter

physical properties
Na$_2$RbSb, Na$_2$CsSb, K$_2$RbSb, Rb$_2$CsSb

crystal structure, physical properties
$\text{K}_2\text{NaSb}$

crystal structure
cupric oxide (CuO)
crystal structure, lattice parameters
electronic properties
lattice properties
transport and optical properties
magnetic properties, heat capacity, density
cuprous oxide (Cu2O)
crystal structure, lattice parameters
band structure, band energies
effective masses
excitons
phonon dispersion, phonon frequencies
sound velocities, elastic moduli
Young's and shear moduli, compressibility
thermal expansion, Grüneisen parameter
transport properties
optical properties
dielectric constant
magnetic properties
Debye temperature, density, melting point
diffusion coefficients
copper sulfides (Cu$_2$S, Cu$_{2-x}$S)

- crystal structure, lattice parameters
- energy gap, effective masses
- compressibility and thermal expansion
- transport properties
- optical and further properties
copper selenides (Cu$_2$Se, Cu$_{2-x}$Se)

crystal structure, lattice parameters

electronic and transport properties

optical and further properties
copper tellurides ($\text{Cu}_2\text{Te}$, $\text{Cu}_{2-x}\text{Te}$)

- crystal structure, lattice parameters
- physical properties
silver oxides (Ag$_2$O$_x$)
crystal structure, lattice parameters
physical properties of AgO
energy gap, effective masses, Ag$_2$O
phonon frequencies, Ag$_2$O
transport and optical properties, Ag$_2$O
further properties, Ag$_2$O
silver sulfide (Ag$_2$S)

- crystal structure
- band structure, effective masses, $\alpha$-modification
- lattice and further properties, $\alpha$-modification
- transport properties, $\alpha$-modification
- magnetic properties, $\alpha$-modification
- energy gap, effective masses, $\beta$-modification
- transport and further properties, $\beta$- and $\gamma$-modification
silver selenide (Ag\textsubscript{2}Se)

- crystal structure, lattice parameters
- energy gap, effective masses
- transport properties
- optical and further properties
silver tellurides (Ag\textsubscript{x}Te\textsubscript{y})

- crystal structure, lattice parameters
- physical properties, \(\alpha\)-Ag\textsubscript{2}Te
- physical properties, \(\beta\)- and \(\gamma\)-Ag\textsubscript{2}Te
Au tellurides

crystal structure, lattice parameters
ternary I-VI compounds

crystal structure, lattice parameters
magnesium silicide (Mg₂Si)

- band structure, energy gap
- intra- and interband transitions, effective masses
- crystal structure, chemical bond
- lattice parameter, thermal expansion, compressibility
- phonon dispersion relations and frequencies
- sound velocities, elastic moduli
- Debye temperature, heat capacity, density, melting point
- electrical and thermal transport properties
- optical properties, dielectric constant
magnesium germanide (Mg$_2$Ge)

- band structure, energy gap
- intra- and interband energies, donor levels, deformation potential, effective masses
- crystal structure, chemical bond
- lattice parameters, thermal expansion, compressibility
- phonon dispersion relations and frequencies
- sound velocities, elastic moduli
- Debye temperature, heat capacity, density, melting point
- electrical and thermal transport properties
- optical properties, dielectric constant
magnesium stannide (Mg$_2$Sn)

- band structure, energy gap
- intra- and interband energies, effective masses, deformation potentials
- crystal structure, chemical bond
- lattice parameter, thermal expansion, compressibility
- Debye temperature, heat capacity, density, melting point
- phonon dispersion relations and frequencies
- sound velocity, elastic moduli
- electrical and thermal transport properties
- optical properties, dielectric constant
- magnetic properties
magnesium plumbide (Mg$_2$Pb)
band structure, band parameters and effective masses
crystal structure, chemical bond
lattice parameter, thermal expansion, compressibility
Debye temperature, heat capacity, density, melting point
phonon frequencies
transport properties
solid solutions $\text{Mg}_2\text{X}_x\text{Y}_{1-x}$

physical properties
$\text{Ca}_2\text{Si}$, $\text{Ca}_2\text{Sn}$, $\text{Ca}_2\text{Pb}$

crystal structure, physical properties
BaSi$_2$, BaGe$_2$, SrGe$_2$

crystal structure, physical properties
II계-V계 합금: 일반 표

크리스탈 구조 및 화학 결합

크리스탈 구조 및 화학 결합

II₃-V₂ 지방화물

II₃-V₂ 아르세나이드

II-V₂ 지방화물

II-V₂ 아르세나이드

크리스탈 구조 및 화학 결합

CdP₄

크리스탈 구조 및 화학 결합

MgP₄

크리스탈 구조 및 화학 결합

II-V 합금

Mg-P 시스템의 구조 데이터

Mg-As 시스템의 구조 데이터

Zn-P 시스템의 구조 데이터

Zn-As 시스템의 구조 데이터

Zn-Sb 시스템의 구조 데이터

Cd-P 시스템의 구조 데이터

Cd-As 시스템의 구조 데이터

Cd-Sb 시스템의 구조 데이터
II$_x$V$_y$ solid solutions: general tables

structural data of II$_x$V$_y$ solid solutions
magnesium arsenide (Mg₃As₂)

physical properties
zinc phosphide (Zn₃P₂)

band structure
interband transition energies, energy gap
spin-orbit and crystal field splitting energies
impurities and defects
crystal structure and chemical bond, lattice parameter, thermal expansion
sound velocities, further lattice properties
bond length, effective charge, electronegativities, ionicity, electron affinity
transport properties
optical properties, dielectric constant
chemical binding energies and shift
Schottky barrier height, work function
magnetic properties
Debye temperature, heat capacity, density, melting point
parameters of vaporization, formation, dissociation
zinc arsenide (Zn₃As₂)

- band structure, energy gap
- spin orbit and crystal field splitting, effective masses
- impurities and defects
- crystal structure, chemical bond, lattice parameter, thermal expansion
- Debye temperature, heat capacity, density, melting point
- sound velocities, further lattice properties
- electronic and thermal transport properties
- optical properties, dielectric constant
- magnetic properties
- parameters of vaporization, formation and decomposition
cadmium phosphide (Cd₃P₂)

band structure, energy gap
spin-orbit and crystal field splitting, interband transition energies
effective masses
g-factors, further band parameters
crystal structure and chemical bond, lattice parameters, thermal expansion
Debye temperature, heat capacity, density, melting point
sound velocities, further lattice parameters
bond lengths, effective charge, electronegativities and related parameters
carrier concentration, resistivity, carrier mobility
thermal conductivity, Lorenz number
magnetoresistance, thermoelectric power and other transport parameters
optical properties, dielectric constant
chemical binding energies and shifts, X-ray emission
photoluminescence, photoconductivity, laser radiation
magnetic properties
parameters of vaporization, condensation, dissociation, formation and decomposition
cadmium arsenide (Cd$_3$As$_2$)

- band structure, general
- near gap valence band structure, energy gap
- interband and splitting band energies
- effective masses
- Fermi surfaces, Fermi energy
- g-factor, further band parameters
- impurities and defects
- crystal structure and chemical bond, lattice parameters
- phase transitions
- thermal expansion
- Debye temperature, heat capacity, density, melting point
- sound velocities, further lattice properties
- carrier concentration, resistivity, carrier mobility
- magnetoresistance, piezoresistance
- thermoelectric power, further transport parameters
- Dingle temperature, quantum oscillations
- optical properties, dielectric constants
- thermal conductivity, Lorenz number, thermoelectrical figure of merit
- parameters of vaporization, heats of dissociation, formation, sublimation, fusion
- entropies, enthalpies, free energy
- thin and amorphous films
- some data on technical applications
solid solutions $\text{II}_3\text{V}_2$

band structure, transition energies, $\text{Cd}_{3-x}\text{Zn}_x\text{As}_2$
lattice properties, $\text{Cd}_{3-x}\text{Zn}_x\text{As}_2$
electronic and thermal transport properties, $\text{Cd}_{3-x}\text{Zn}_x\text{As}_2$
special data on $\text{Cd}_{2.8}\text{Zn}_{0.2}\text{As}_2$
physical properties of $\text{Cd}_3\text{As}_{2-x}\text{P}_x$
physical properties of $\text{Cd}_3\text{AsP}$
physical properties of $\text{Cd}_3\text{As}_{1.4}\text{P}_{0.6}$
physical properties of $\text{Cd}_3\text{As}_{1.6}\text{P}_{0.4}$
physical properties of $\text{Cd}_{3-x}\text{Zn}_x\text{P}_2$
physical properties of $\text{Zn}_3\text{As}_{2-x}\text{P}_x$ and $(\text{Cd}_3\text{As}_2)_{1-x}(\text{Zn}_3\text{P}_2)_x$
zinc phosphide (ZnP₂)

band structure, energy gap, excitons, α-modification
impurities and defects, α-modification
crystal structure, chemical bond, lattice parameters, thermal expansion, α-modification
lattice vibrations, sound velocity, Young's modulus, α-modification
conductivity, carrier concentrations and mobility, α-modification
optical properties, α-modification
nonlinear optical parameters, α-modification
photo-, cathodo- and electroluminescence, photoconductivity, α-modification
photoresponse, Schottky barriers, α-modification
magnetic properties, α-modification
heat capacity, density, melting point, α-modification
parameters of vaporization and formation, free energy, α-modification
band structure, energy gap, effective masses, β-modification
photoconductivity and reflectivity spectra, β-modification
impurities and defects, β-modification
crystal structure, chemical bond, lattice parameters, thermal expansion, β-modification
resistivity, carrier concentrations and mobilities, β-modification
thermoelectricity, Schottky barrier heights, β-modification
dielectric constants, optical properties, β-modification
magnetic properties, β-modification
heat capacity, density, melting point, β-modification
parameters of formation and dissociation, free energy, β-modification
zinc arsenide (ZnAs$_2$)

band structure, band structure parameters
reflectivity, photoconductivity spectra
impurities and defects
crystal structure, chemical bond, lattice parameter, further lattice properties
Debye temperature, heat capacity, density, melting point
resistivity, carrier concentration and mobility, thermoelectric power and thermal conductivity
Schottky barrier heights
optical properties, dielectric constant
parameters of vaporization, sublimation, formation, dissociation, fusion, free energy
cadmium phosphide (CdP$_2$)

- band structure, energy gap, $\beta$-modification
- exciton and interband transition energies, $\beta$-modification
- crystal structure and chemical bond, lattice parameters and properties, $\beta$-modification
- optical properties, photoconductivity, $\beta$-modification
- nonlinear optical parameters, $\beta$-modification
- Schottky barrier heights, $\beta$-modification
- magnetic properties, $\beta$-modification
- heat capacity, density, melting point, $\beta$-modification
- parameters of vaporization and dissociation, $\beta$-modification
cadmium arsenide (CdAs$_2$)

- band structure parameters
- impurities and defects
- crystal structure and chemical bond, lattice parameters, thermal expansion
- compressibility, Grüneisen coefficient
- Debye temperature, heat capacity, density, melting point
- electrical and thermal transport properties
- optical properties, dielectric constants
- magnetic properties
- parameters of vaporization, dissociation, formation, fusion, free energy
- physical properties of amorphous phase
solid solutions between $\text{II-V}_2$ compounds

physical properties
MgP$_4$

crystal structure, physical properties
MgAs₄

crystal structure, physical properties
ZnP₄, CdP₄

crystal structure, lattice parameters, density
energy gap, crystal field splitting energy of CdP₄
transport properties, field emission of CdP₄
parameters of formation, dissociation and vaporization, entropy of CdP₄
CdAs$_4$
crystal structure, physical properties
CdP$_4$ - CdAs$_4$ solid solutions

physical properties, CdP$_4$-CdAs$_4$
ZnAs, CdAs

crystal structure, physical properties of ZnAs
crystal structure, physical properties of CdAs
zinc antimonide (ZnSb)

band structure, energy gap, interband transitions, Fermi surface

effective masses

crystal structure and chemical bond, lattice parameters

melting point, density, Debye temperature

electronic and thermal transport properties

refractive index
cadmium antimonide (CdSb)

band structure, energy gap
interband energies, effective masses, Fermi surface
crystal structure and chemical bond, lattice parameters
Debye temperature, density, melting point
resistivity, carrier mobilities, thermal conductivity
thermoelectric power, piezoresistance
refractive index, dielectric constant
solid solutions between II-V compounds

ZnSb - CdSb solid solutions ($Zn_xCd_{1-x}Sb$)
zinc and cadmium antimonide (Zn₄Sb₃, Cd₄Sb₃)

- lattice parameters of Zn₄Sb₃
- physical parameters of β-Zn₄Sb₃
- lattice parameters and density of Cd₄Sb₃
- electronic and transport parameters of β-Cd₄Sb₃
- further parameters of β-Cd₄Sb₃
zinc and cadmium antimonide (solid solutions)

electronic properties
zinc and cadmium phosphides

properties of Zn$_7$P$_{10}$ and Cd$_7$P$_{10}$

properties of Cd$_6$P$_7$
CdCl₂, CdBr₂, CdI₂, HgCl₂, HgBr₂, HgI₂

crystal structure, chemical bond
cadmium dichloride (CdCl₂)
  - interband transition energies
  - lattice parameters and further lattice properties
  - optical properties, dielectric constant
cadmium dibromide (CdBr$_2$)

interband transition energies

lattice parameters and further lattice properties

optical properties, dielectric constant
cadmium diiodide (CdI₂)

- band structure, energy gap
- interband transition energies, further band parameters
- lattice parameters and related properties
- phonon wavenumbers, sound velocity, elastic moduli
- optical properties, dielectric constants
mercury dichloride (HgCl₂)

physical properties
mercury dibromide (HgBr₂)

physical properties
mercury diiodide (HgI2)

- band structure, energy gap
- interband transition energies, further band parameters
- effective masses
- lattice parameters and related properties
- phonon dispersion and wavenumbers
- sound velocities, elastic moduli
- transport properties
- optical properties, dielectric constant


III\textsubscript{x}-VI\textsubscript{y} compounds

- Crystal structure, chemical bond of III-VI compounds
- General characterization of III\textsubscript{x}-VI\textsubscript{y} compounds other than III-VI and III\textsubscript{2}-VI\textsubscript{3} compounds
- General characterization of TlInSe\textsubscript{2} type compounds
gallium sulfide (GaS)

- band structure, direct energy gap
- direct exciton transition energies, exciton binding energy
- indirect energy gap and exciton energies
- interband transition energies, effective masses
- crystal structure, lattice parameters, thermal expansion
- Debye temperature, heat capacity, density, hardness, melting point
- phonon dispersion and wavenumbers
- elastic moduli
- compressibilities, Grüneisen parameters
- electrical and thermal conductivity
- carrier mobilities, relaxation time, diffusion length
- electron trapping levels
- thermoelectric power
- optical properties
- dielectric constants, second order susceptibility
- core level energies, photoelectric threshold
- Schottky barrier heights
- magnetic properties
- heat of formation, entropy, vapor pressure
gallium selenide (GaSe)

crystal structure, chemical bond
band structure
direct energy gap
direct exciton gap
transition energies into excited direct exciton states
direct exciton binding energy and related parameters
exciton masses and g-factor
indirect energy gap
indirect exciton transition and binding energies
interband transition energies
g-factors of electrons and holes
effective masses
crystal structure, lattice parameter, thermal expansion
Debye temperature, heat capacity, density, hardness, melting point
phonon properties, general
phonon dispersion and wavenumbers
sound velocity, elastic moduli
Poisson's ration, compressibility
Grüneisen parameters
transport properties, general
electrical and thermal conductivity
activation energies for the electrical conductivity
carrier mobilities, Hall coefficient and related parameters
carrier lifetimes
trapping levels of charge carriers
thermoelectric power (Seebeck coefficient)
refractive index
absorption coefficient, reflectivity, reststrahlen band
dielectric constant
higher-order susceptibilities
core level energies, photoelectric threshold energy
Schottky barrier heights
magnetic properties
heat of formation, entropy
gallium telluride (GaTe)

- band structure, energy gap
- direct exciton gap
- exciton binding energy, splitting energy
- interband transition energies
- effective masses
- crystal structure, lattice parameters, thermal expansion
- Debye temperature, heat capacity, density, hardness, melting point
- phonon wavenumbers
- sound velocity, compressibility, Grüneisen parameters
- electrical and thermal conductivity
- carrier mobilities, Hall coefficient
- thermoelectric power (Seebeck coefficient)
- absorption and reflection
- refractive index, dielectric constants, second order susceptibility
- core level energies, photoelectric threshold
- Schottky barrier heights
- heat of formation, entropy
indium sulfide (InS)
  - band structure, energy gap
  - interband transition energies, effective masses
  - crystal structure, lattice parameters, thermal expansion
  - heat capacity, density
  - phonon wavenumbers
  - compressibility
  - Grüneisen parameters
  - electrical and thermal conductivity, mobility
  - optical properties, dielectric constant
  - Schottky barrier height
  - magnetic properties
  - heat of formation, entropy
indium selenide (InSe)
  - band structure
  - indirect energy gap
  - indirect exciton data
  - direct energy gap
  - direct exciton data
  - interband transition energies
  - effective masses, polaron coupling constant and related parameters
  - crystal structure, lattice parameter, thermal expansion
  - Debye temperature, heat capacity, density, melting point
  - phonon wavenumbers
  - elastic moduli
  - compressibility, Grüneisen parameters
  - electrical and thermal conductivity
  - carrier mobilities
  - trapping and acceptor levels
  - thermoelectric power (Seebeck coefficient)
  - optical properties
  - dielectric constant
  - core level energies, Schottky barrier height
  - phase diagram, heat of formation, entropy
  - magnetic susceptibility
indium telluride (InTe)

energy gap, effective masses

crystal structure, lattice parameters, thermal expansion

heat capacity, density, hardness, melting point

phonon wavenumbers

compressibility, bulk modulus, Grüneisen parameter

electrical and thermal conductivity

carrier mobilities, diffusion

thermoelectric power (Seebeck coefficient)

dielectric constant

magnetic properties

heat of formation and transformation, entropy

work function, electron affinity
thallium sulfide (TlS)

- energy gap, effective masses
- crystal structure, lattice parameters, density, Debye temperature, heat capacity
- phonon wavenumbers, mode Grüneisen parameters
- electrical and thermal conductivity, carrier mobilities
- optical properties
- phase diagram, heat of formation, entropy
thallium selenide (TlSe)

- band structure, energy gap
- interband transition energies
- effective masses
- crystal structure, lattice parameter, thermal expansion
- Debye temperature, heat capacity, density, melting point
- phonon dispersion and wavenumbers
- elastic moduli, compressibility, Young's modulus, Poisson's ratio
- electrical and thermal conductivity
- mobility, Hall coefficient
- optical properties, dielectric constant
- phase diagram, heat of formation, entropy
thallium telluride (TlTe)

effective masses
crystal structure, lattice parameters, density, heat capacity
electrical and thermal conductivity
Hall coefficient, mobility
thermoelectric power (Seebeck coefficient)
phase diagram, heat of formation, entropy
GaS$_x$Se$_{1-x}$

- General characterization
- Band structure, direct and indirect exciton gaps
- Higher optical transition energies
- Lattice properties
- Transport properties
- Optical properties
GaSe$_x$Te$_{1-x}$

general characterization

band structure, direct energy gap

direct exciton transition energies

lattice properties

electrical conductivity

absorption coefficient
GaS$_{1-x}$Te$_x$

phase diagram
Ga$_x$In$_{1-x}$Se

direct exciton gap
lattice properties, phase diagram
electrical conductivity, absorption coefficient
\( \text{Ga}_x\text{In}_{1-x}\text{Te} \)

energy gap, effective masses
lattice properties
mobilities, electrical and thermal conductivity
In$_x$S$_{1-x}$Se

direct energy gap, direct exciton binding energy, reduced exciton effective mass
$\text{TiS}_{1-x}\text{Se}_x$

- indirect energy gap
- lattice properties
- transport properties
$\text{Tl}_{2-x}\text{In}_x\text{Se}_2$

physical properties
Tl$_x$In$_{1-x}$Te

transport properties
Ga$_x$-VI$_y$ compounds

crystal structure, lattice parameters, density
$\text{In}_x\text{S}_y$ compounds

properties of $\text{In}_3\text{S}_4$

properties of $\text{In}_6\text{S}_7$

properties of $\text{In}_3\text{S}_4$
In$_{x}$Se$_{y}$ compounds

- properties of In$_2$Se
- properties of In$_4$Se$_3$
- properties of In$_6$Se$_7$
- properties of In$_5$Se$_7$
- properties of In$_{60}$Se$_{40}$, In$_{50}$Se$_{50}$ and In$_{40}$Se$_{60}$
- properties of In$_4$Se$_3$ and In$_5$Se$_6$
In$_x$Te$_y$ compounds

properties of In$_4$Te$_3$

properties of In$_3$Te$_4$

properties of In$_2$Te$_5$
$\text{Tl}_x\text{S}_y$ compounds

- properties of $\text{Tl}_2\text{S}$
- properties of $\text{Tl}_4\text{S}_3$
- properties of $\text{TIS}_2$
- properties of $\text{Tl}_2\text{S}_3$
Tl$_2$Se

physical properties
Tl$_x$-Te$_y$ compounds

properties of Tl$_2$Te

properties of Tl$_5$Te$_3$
$\text{TlAI}_2$ 

lattice properties
TIAISe$_2$

lattice properties
TlGaS$_2$

energy gaps
lattice properties
transport properties
optical properties, dielectric constant
TlGaSe$_2$

- Band structure, energy gaps
- Higher optical transition energies, effective masses
- Lattice parameters, density, melting point, Debye temperature, heat capacity
- Phonon wavenumbers, Grüneisen parameters
- Transport properties
- Schottky barrier height
- Optical properties, dielectric constant
$\text{TlGaTe}_2$

energy gap, effective masses
lattice and thermodynamical properties
transport properties
optical properties, dielectric constants
TlInS$_2$

energy gaps, effective masses
lattice properties
phonon wavenumbers
transport properties
optical properties, dielectric constant
TlInSe$_2$

energy gaps, effective masses
lattice properties
transport properties
optical properties, dielectric constant
TlInTe$_2$

- energy gap, effective masses
- lattice properties
- transport properties
- optical properties, dielectric constant
TlGaS$_{2x}$Se$_{2(1-x)}$

physical properties
TlInS$_{2x}$Se$_{2(1-x)}$, TlInS$_{2x}$Te$_{2(1-x)}$

physical properties
TlGa$_x$In$_{1-x}$S$_2$, TlGa$_{1-x}$In$_x$Se$_2$, TlGa$_{1-x}$In$_x$Te$_2$, TlIn$_{1-x}$Tl$_x$Se$_2$

physical properties
III-VII compounds, general tables
  general characterization
  crystal structure of TI-compounds
  phase transitions
  chemical bond
thallium fluoride (TIF)

physical properties
thallium chloride (TlCl)

band structure, energy gaps, TlCl (I) -phase
interband transition energies, TlCl (I) -phase
effective masses, TlCl (I) -phase
band structure, energy gaps, interband transition energies, TlCl (III)-phase
impurities and defects, TlCl (I)-phase
crystal structure, chemical bond, lattice parameters, interatomic distances, thermal expansion
Debye temperature, density, melting point, TlCl(I) phase
phonon dispersion relations and frequencies, TlCl(I)-phase
sound velocity, elastic moduli, TlCl(I)-phase
Grüneisen constant, compressibility, TlCl(I)-phase
transport properties, TlCl(I)-phase
optical properties
dielectric constants
thallium bromide (TlBr)

- band structure, energy gaps, TlBr(I)-phase
- interband transition energies, TlBr(I)-phase
- effective masses, TlBr(I)-phase
- band structure, energy gaps, interband transitions, TlBr(III)-phase
- impurities and defects, TlBr (I)-phase
- crystal structure, chemical bond, lattice parameters, thermal expansion
- Debye temperature, density, melting point, TlBr(I)-phase
- phonon dispersion relations and frequencies
- elastic moduli, Grüneisen constant, compressibility, TlBr(I) -phase
- transport properties, TlBr(I)-phase
- optical properties
- dielectric constants, TlBr(I)-phase
thallium iodide (TlI)

band structure, energy gaps and related parameters, TlI(I)-phase
band structure, energy gaps and related parameters, TlI(II)-phase
band structure, energy gaps and related parameters, TlI(III)-phase
crystal structure, chemical bond, lattice parameters, thermal expansion
density, melting point
phonon frequencies, TlI(III)-phase
compressibility
optical properties
dielectric constants
TiCl$_x$Br$_{1-x}$

crystal structure, electronic and optical properties
TlBr$_x$I$_{1-x}$

crystal structure, electronic and optical properties
IV-V compounds, general tables

crystal structure, lattice parameters, chemical bond of SiP, GeP, SiAs, GeAs

crystal structure, lattice parameters, chemical bond of SiP_2, SiAs_2, GeAs_2
SiP, GeP

physical properties
SiAs

band structure, energy gaps
interband transition energies
transport parameters
crystal structure, lattice parameters, dielectric constant, melting point
GeAs

physical properties
SiP$_2$, SiAs$_2$

physical properties
GeAs$_2$

physical properties
IV-VI compounds, general tables

- crystal structure, chemical bond of GeS, GeSe, SnS, SnSe
- crystal structure, chemical bond and related data of GeTe, SnTe
Germanium sulfide (GeS)

- Band structure, energy gap
- Interband transition energies
- Effective mass
- Impurities and defects
- Crystal structure, lattice parameters, heat capacity, density, melting point
- Phonon dispersion curves
- Phonon frequencies
- Intralayer force constants
- Transport properties
- Optical properties, dielectric constants
- Heat of formation, entropy
germanium selenide (GeSe)

energy gaps
crystal structure, lattice parameters, heat capacity, density, melting point
phonon dispersion relations and frequencies
transport properties
optical properties, dielectric constants
heat of formation
germanium telluride (GeTe)
  band structure
  energy gap, interband transitions
  binding energies of germanium and tellurium levels
  effective masses
  deformation potentials
  structural data
  heat capacity, density, melting point
  phonon wavenumbers
  transport properties
  optical properties, dielectric constant
  magnetic properties
  heats of formation and sublimation, entropy
tin sulfide (SnS)
  band structure, energy gaps
  effective masses
  crystal structure, lattice parameters, thermal expansion
  Debye temperature, heat capacity, density, melting point
  phonon frequencies
  intralayer and interlayer force constants
  transport properties
  optical properties, dielectric constants
  heats of formation and sublimation, entropy
tin selenide (SnSe)

band structure, energy gap, effective masses
impurity levels
crystal structure, lattice parameters, Debye temperature, heat capacity, melting point
phonon frequencies
transport properties
optical properties, dielectric constants
heat of formation
tin telluride (SnTe)

- band structure
- energy gaps, interband transition energies
- effective masses
- deformation potentials
- crystal structure, lattice parameters
- thermal expansion, crystal binding energy
- Debye temperature, heat capacity, density
- phonon dispersion relations and frequencies
- sound velocity, elastic constants
- compressibility, Grüneisen parameter, effective charge
- transport properties
- optical properties, dielectric constant
- magnetic properties
- solidus temperatures, melting curve, heats of sublimation and formation
lead monoxide (PbO)
  energy gaps
  exciton transition energies
  impurities and defects
  crystal structure, lattice parameters
  density, melting point
  phonon frequencies
  transport properties
  optical properties, dielectric constant
lead sulfide (PbS)

energy gap

critical point energies

binding energies of core levels

pseudopotential form factors

effective masses, conduction band, Fröhlich coupling parameter, Fermi level

g-factors of electrons and holes

deformation potentials

impurities and defects

crystal structure, lattice parameters, thermal expansion

Debye temperature, heat capacities, density, melting point

phonon dispersion and frequencies

sound velocity, elastic moduli

bulk moduli, Debye-Waller factor, Grüneisen constant

transport properties

optical properties, dielectric constants
lead selenide (PbSe)

- energy gap and band structure
- critical point energies
- core to conduction level transitions
- pseudopotential form factors
- effective masses, Fermi level
- g-factors of electrons and holes
- band parameters, deformation potentials
- impurities and defects
- crystal structure, lattice parameters, thermal expansion
- Debye temperature, density, melting point
- phonon frequencies, sound velocities
- elastic moduli, Grüneisen constant
- transport properties
- optical properties, dielectric constant
lead telluride (PbTe)

general characterization, band structure
energy gaps
critical point energies
core to conduction level transitions
effective masses
Fröhlich coupling constant, Fermi level
g-factors of electrons and holes
band parameters, deformation potential
impurities and defects
crystal structure, lattice parameters, thermal expansion
Debye temperature, heat capacities, density, melting point
phonon dispersion, phonon frequencies
sound velocities, elastic moduli
bulk modulus, Grüneisen constant
carrier concentration, mobilities
magnetotransport, carrier lifetimes
thermal conductivity
optical properties, dielectric constants
PbS$_{1-x}$Se$_x$

physical properties
PbSe$_{1-x}$Te$_x$

physical properties
Pb$_{1-x}$Sn$_x$Se

general characterization, energy gap, effective masses
impurities and defects
lattice properties
transport properties
optical properties, dielectric constant, magnetic susceptibility
Pb$_{1-x}$Sn$_x$Te

general characterization
band structure, energy gap and interband parameters
further band parameters, effective masses
impurities and defects
phonon properties, elastic moduli
transport properties
optical properties, dielectric constant
various further properties
GeSe$_x$S$_{1-x}$

physical properties
SnSe$_x$S$_{1-x}$

physical properties
IV-VI\textsubscript{2} compounds, general tables

crystal structure, lattice parameters of GeO\textsubscript{2}, SnO\textsubscript{2}, PbO\textsubscript{2}

crystal structure, lattice parameters, chemical bond of SiS\textsubscript{2}, SiSe\textsubscript{2}

crystal structure, lattice parameters, chemical bond of GeS\textsubscript{2}, GeSe\textsubscript{2}

crystal structure, lattice parameters, chemical bond of SnS\textsubscript{2}, SnSe\textsubscript{2}, SnS\textsubscript{x}Se\textsubscript{2-x}
germanium dioxide (GeO₂)

band structure, energy gaps
lattice properties
heat capacity, density, melting point
phonon frequencies
elastic, bulk and torsion moduli
electrical conductivity
optical properties, dielectric constant
entropy, heat of formation
germanum disulfide (GeS$_2$)

- energy gap, interband transition energies
- crystal structure, lattice parameters, heat capacity, melting point, transformation heat
- phonon frequencies
- dielectric constants
germanium diselenide (GeSe$_2$)

energy gaps, interband energies

crystal structure, lattice parameters, heat capacity, melting point

phonon frequencies

resistivity

optical properties, dielectric constants

heat of formation, entropy
tin dioxide (SnO₂)

- band structure, band parameters
- impurities and defects
- crystal structure, lattice parameters, thermal expansion
- Debye temperature, heat capacity, density, melting point
- phonon dispersion and frequencies
- sound velocities, elastic moduli
- bulk and torsional moduli, mode Grüneisen parameters
- transport properties
- thermal conductivity
- optical properties, dielectric constants
- entropy, heat of formation
tin disulfide (SnS$_2$)

band structure, energy gaps
interband transitions of higher energy
crystal structure, lattice parameters
phonon dispersion, phonon frequencies
transport properties
optical properties, dielectric constants
heat capacity, density, melting point
heat of formation, entropy
tin diselenide (SnSe₂)

- band structure, energy gaps
- interband transitions of higher energy
- effective masses
- impurities and defects
- crystal structure, lattice parameters, density, melting point
- phonon dispersion, phonon frequencies
- elastic moduli, interlayer force constants
- electrical and thermal transport properties
- optical properties, dielectric constants
- heat of formation, entropy
lead dioxide (PbO₂)

physical properties
SnS$_x$Se$_{2-x}$

physical properties
Si₂Te₃

band structure, energy gap
effective masses
crystal structure, chemical bond of Si₂Te₃ and SiTe₂
electrical and thermal transport properties
optical properties
heat capacity, density, melting point
heat of formation, entropy
Sn$_2$S$_3$, PbSnS$_3$, SnGeS$_3$, PbGeS$_3$

energy gaps

 crystal structure, chemical bond of Sn$_2$S$_3$, PbSnS$_3$

 crystal structure, chemical bond of SnGeS$_3$, PbGeS$_3$

heat capacity, density, heat of formation

phonon frequencies

transport properties

optical properties, dielectric constants
lead difluoride (PbF$_2$)

crystal structure, lattice parameters, thermal expansion, phase transitions
Debye temperature, heat capacity, density, melting point
phonon dispersion relations and wavenumbers
elastic moduli and compliances
compressibility, bulk modulus and other lattice properties
optical properties
dielectric constants
lead dichloride (PbCl₂)

- energy gaps
- exciton parameters, interband transition energies
- crystal structure, chemical bond, lattice parameters
- density, melting point
- optical properties, dielectric constants
lead dibromide (PbBr₂)

energy gap, further band structure parameters
crystal structure, lattice parameters
density, melting point
optical properties, dielectric constants
lead diiodide (PbI₂)

- band structure
- energy gaps, band edge transition energies
- free exciton parameters
diamagnetic shift, bound excitons
interband transition and spin orbit splitting energies
core transition energies, core and valence band peak levels
effective masses, g-factors
crystal structure, lattice parameters, thermal expansion
density, melting point
phonon dispersion and wavenumbers
sound velocities, elastic moduli
Grüneisen parameters, effective charge, force constants
carrier mobilities
optical properties, dielectric constants
luminescence, stimulated emission
arsenic oxide (As₂O₃)

- crystal structure
- chemical bond
- lattice parameters
- physical properties
arsenic sulfide (As$_2$S$_3$)

- band structure, energy gaps
- interband transition energies, work function
- crystal structure, chemical bond, lattice parameters
- heat capacity, melting point
- phonon properties (general), phonon frequencies
- mobility, resistivity
- optical properties, dielectric constant
- photoconductivity, luminescence
arsenic selenide (As$_2$Se$_3$)

- band structure
- energy gaps
- spin splitting and interband transition energies
- peaks and shoulders in the $\varepsilon_2$ spectra
- core level energies
- impurities and defects
- crystal structure, chemical bond, lattice parameters
- heat capacity, melting point
- phonon properties, general
- phonon frequencies and force constants
- resistivity, mobility
- optical properties, dielectric constant, photoluminescence
arsenic telluride (As₂Te₃)
crystal structure, chemical bond, lattice parameters
physical properties
antimony oxide (Sb$_2$O$_3$)

crystal structure, chemical bond
IR absorption bands
electron energy loss, photoemission, Auger spectroscopy
dielectric constant
Raman frequencies
thermal conductivity, thermoelectric power
heat capacity, density, melting point
antimony sulfide (Sb$_2$S$_3$)

general characterization, band structure
energy gap
impurities and defects
crystal structure, chemical bond, lattice parameters (including data for Sb$_2$Se$_3$, Bi$_2$S$_3$)
phonon frequencies
microwave vibration, surface phonon-polariton frequencies
sound velocity
electrical conductivity, pyrocurrent, thermoelectric power
optical properties, photoconductivity
dielectric constants
magnetic properties
Debye temperature, heat capacity
density, melting point
phase transitions
antimony selenide (Sb$_2$Se$_3$)

- band structure, energy gap
- positions of density-of-states maxima
- interband transition energies
- impurities and defects
- crystal structure, chemical bond, lattice parameters (including data for Sb$_2$S$_3$, Bi$_2$S$_3$)
- Debye temperature, heat capacity, melting point, thermodynamical data
- phonon frequencies
- electrical conductivity
- mobility, Seebeck effect
- optical properties
- dielectric constants
- magnetic properties
antimony telluride ($\text{Sb}_2\text{Te}_3$)

- band structure, energy gap
- effective masses
- impurities and defects
- crystal structure, chemical bond, lattice parameters (including data for $\text{Bi}_2\text{Se}_3$, $\text{Bi}_2\text{Te}_3$)
- thermal expansion
- density, melting point
- Debye temperature, heat capacity
- phonon dispersion, phonon frequencies
- transport properties
- optical properties
- dielectric constants
- thermal conductivity, thermodynamical data
- magnetic properties
bismuth oxide (Bi$_2$O$_3$)

- energy gaps
- optical spectra
- crystal structure, chemical bond, lattice parameters
- IR absorption bands, Raman spectra
- transport properties
- thermal conductivity
- magnetic properties
- heat capacity, density, melting point
bismuth sulfide (Bi$_2$S$_3$)

- energy gaps
- crystal structure, chemical bond, lattice parameter (including data for Sb$_2$S$_3$, Sb$_2$Se$_3$)
- phonon frequencies
- transport properties
- optical properties, dielectric constants
- magnetic properties
- heat capacity, density, melting point
bismuth selenide (Bi$_2$Se$_3$)

- band structure
- energy gaps
- higher interband transition energies
- effective masses
- $g$-factor
- impurity and defects
- crystal structure, chemical bond, lattice parameter (including data of related compounds)
- phonon dispersion, phonon frequencies
- elastic moduli
- transport properties
- optical properties, dielectric constants
- thermal conductivity
- magnetic properties
- Debye temperature, heat capacity
- density, melting point
bismuth telluride (Bi$_2$Te$_3$)

- band structure
- energy gaps
- interband transition energies
- work function
- effective masses
- spin-splitting factors
- g-factors
- impurity and defect levels
- crystal structure, chemical bond, lattice parameters (including data for related compounds)
- phonon dispersion, phonon frequencies
- elastic moduli
- sound velocity, Grüneisen constant
- transport properties
- optical properties, dielectric constant
- thermal conductivity
- magnetic properties
- Debye temperature, heat capacity
- density, melting point
- thermal expansion, mechano-caloric effect
As$_4$S$_4$ (realgar)

crystal structure, chemical bond, lattice parameters

physical properties
$(\text{Bi}_x\text{Sb}_{1-x})_2(\text{Se}_y\text{Te}_{1-y})_3$

crystal structure, chemical bond, lattice parameters of stoichiometric compounds

physical properties
(Bi$_{1-x}$Sb$_x$)$_2$Te$_3$

physical properties
$\text{Bi}_2(\text{Se}_x\text{Te}_{1-x})_3$

physical properties
$\text{Sb}_2(\text{Se}_x\text{Te}_{1-x})_3$

physical properties
(Bi$_{1-x}$Sb$_x$)$_2$Se$_3$, Bi$_2$Te$_{3-x}$S$_x$, Sb$_2$Te$_{3-x}$Se$_x$

physical properties
$\text{Bi}_2\text{TeO}_5$

properties
V-VII\textsubscript{3} compounds, general tables

crystal structure, chemical bond of AsI\textsubscript{3}, SbI\textsubscript{3}, BiI\textsubscript{3}
arsenic triiodide (AsI₃)

energy gap
crystal structure, chemical bond, thermal expansion
density, melting point
phonon properties
optical properties, photoconductivity
heat and entropy change of fusion
magnetic properties
antimony triiodide (SbI₃)

energy gap, effective masses
crystal structure, density, melting point
phonon wavenumbers, elastic constants
resistivity
optical properties, dielectric constant
photoconductivity, photoemission
heat and entropy change of fusion
magnetic properties
bismuth triiodide (BiI₃)

- band structure, energy gap, effective masses, excitons
- crystal structure, phase diagram
- density, melting and boiling points
- phonon properties, elastic constants
- resistivity
- optical properties, dielectric constant, non-linear properties
- photoconductivity and photoemission
- vapor pressure, parameters of fusion and vaporization
Non-Tetrahedrally Bonded Elements and Binary Compounds I
Supplement to Vols. III/17e, f (Print Version) Revised and Updated Edition of Vols. III/17e, f (CD-ROM)
ISBN: 978-3-540-64583-2