

Subject Index of Volume 197

- Aluminides**
 standard enthalpies of formation of 5d aluminides by high-temperature direct synthesis calorimetry, 75
- Aluminium**
 effect of compositional deviations from stoichiometry on the plastic behaviour of Ti₃Al single crystals, 17
 further compounds related to the α -Ba₂ScAlO₅ type: Ba₆Rh_{2.33}Yb₂Al_{1.67}O₁₅, Ba_{5.5}Ca_{0.5}Rh₂Y₂Al₂O₁₅ and Ba₆Rh₄Al₂O₁₅, 51
 a covalent view of chemical bonding in Laves phases CaLi_xAl_{2-x}, 109
- Applications**
 first principles methods for structural trends in oxides: applications to crystalline silica, 137
 description of layered structures – applications to high T_c superconductors, 153
- Atomic environments**
 atomic-environment classification of the chemical elements, 177
 atomic environment classification of the rhombohedral “intermetallic” structure types, 243
- Barium**
 further compounds related to the α -Ba₂ScAlO₅ type: Ba₆Rh_{2.33}Yb₂Al_{1.67}O₁₅, Ba_{5.5}Ca_{0.5}Rh₂Y₂Al₂O₁₅ and Ba₆Rh₄Al₂O₁₅, 51
- Boron**
 investigations of ordered structures in boron-containing Pd₃Mn alloys, 35
 the formation of the L1₂ ordered structure in hypostoichiometric Pd₃Mn alloys containing interstitial boron, 43
- Boron carbide**
 oxidation stability of B₄C–Me_xB_y composite materials, 87
- Calcium**
 a covalent view of chemical bonding in Laves phases CaLi_xAl_{2-x}, 109
- Chalcogenides**
 NbFe_{1.28}Te₃, a quasi-layered ternary niobium telluride compound, 21
 new ternary iron chalcogenides A₉Fe₂X₇ (A≡K, Rb, Cs; X≡S, Se): synthesis, crystal structure and magnetic properties, 83
- Chemical bonding**
 a covalent view of chemical bonding in Laves phases CaLi_xAl_{2-x}, 109
- Chemical elements**
 atomic-environment classification of the chemical elements, 177
- Chemistry principles**
 statistical studies of intermetallics stressing the validity of three principles, 167
- Classification**
 standardization of crystal structure data as an aid to the classification of crystal structure types, 291
- Clusters**
 structural stability, local topology and electron count in small s-valent clusters, 145
- Conductors**
 condensed tetrakaidecahedral clusters. The crystal structure of NiTa₈Se₈, 57
- Crystal chemistry**
 synthesis and structure of two phases with both extended and point defects: Mn_{1-x}Bi_{2+y}S₄ and Mn_{1-x}Bi_{2+y}Se₄, 1
- Crystalline silica**
 first principles methods for structural trends in oxides: applications to crystalline silica, 137
- Crystal structure**
 synthesis, structure and thermal stability of Yb₄Mg₄Fe₃H₂₂, 65
 new ternary iron chalcogenides A₉Fe₂X₇ (A≡K, Rb, Cs; X≡S, Se): synthesis, crystal structure and magnetic properties, 83
 standardization of crystal structure data as an aid to the classification of crystal structure types, 291
- Cybernetics**
 information-predicting systems for the design of new materials, 159
- Defects**
 synthesis and structure of two phases with both extended and point defects: Mn_{1-x}Bi_{2+y}S₄ and Mn_{1-x}Bi_{2+y}Se₄, 1
- Deuterium**
 trimagnesium rhenium(I) heptahydride, Mg₃ReH₇, containing octahedral [ReH₆]⁵⁻ complex anions, 97
- Elastic effects**
 volume effects in rare earth intermetallic compounds, 213
- Electrical resistivity**
 investigations of ordered structures in boron-containing Pd₃Mn alloys, 35
 the formation of the L1₂ ordered structure in hypostoichiometric Pd₃Mn alloys containing interstitial boron, 43
- Electroceramics**
 thermodynamic and transport properties of electroceramic oxide systems, 217
- Electron count**
 structural stability, local topology and electron count in small s-valent clusters, 145
- Electron diffraction**
 investigations of ordered structures in boron-containing Pd₃Mn alloys, 35
 the formation of the L1₂ ordered structure in hypostoichiometric Pd₃Mn alloys containing interstitial boron, 43
- Electronics**
 some electronic aspects of structural maps, 281
- Electronic spectroscopy**
 the IR, NMR (¹H, ¹³C) and electronic spectra of the complexes *cis*-[Rh(CO)₂(pyridine-*N*-oxide)(X)] (X≡Cl, Br), 69

- Electrorefining
development of TRAIL, a simulation code for the molten salt electrorefining of spent nuclear fuel, 7
- Electrotransport
development of TRAIL, a simulation code for the molten salt electrorefining of spent nuclear fuel, 7
- Elemental analysis
the IR, NMR (^1H , ^{13}C) and electronic spectra of the complexes *cis*-[Rh(CO)₂(pyridine-*N*-oxide)(X)] (X ≡ Cl, Br), 69
- Enthalpies of formation
standard enthalpies of formation of 5d aluminides by high-temperature direct synthesis calorimetry, 75
- Enthalpy of sublimation
vapour pressures and standard molar enthalpy of sublimation of crystalline tris(pentane-2,4-dionato)-ruthenium(III), 105
- Fe₃Al composites
properties of Fe₃Al matrix composites with Al₂O₃ particle dispersions, 29
- Floating zone method
effect of compositional deviations from stoichiometry on the plastic behaviour of Ti₃Al single crystals, 17
- Gadolinium
room temperature variation in the threshold fields in R_xY_{1-x}Mn₆Sn₆ (R ≡ Ce–Nd, Sm, Gd–Ho) solid solutions, 101
- Hard magnets
local atomic environments of hard magnets, metallic glasses, and icosahedral phases, 271
- Hot pressing
oxidation stability of B₄C–Me_xB_y composite materials, 87
- Icosahedral phases
local atomic environments of hard magnets, metallic glasses, and icosahedral phases, 271
- Intermetallic compounds
volume effects in rare earth intermetallic compounds, 213
- Intermetallics
atomic environment classification of the rhombohedral “intermetallic” structure types, 243
- Iron
nbFe_{1.28}Te₃, a quasi-layered ternary niobium telluride compound, 21
- Lanthanum manganite
magnetic properties of lanthanum manganite and valence equilibria of manganese, 91
- Layered structures
description of layered structures — applications to high T_c superconductors, 153
- Lithium
a covalent view of chemical bonding in Laves phases CaLi_xAl_{2-x}, 109
- Magnesium
trimagnesium rhenium(I) heptahydride, Mg₃ReH₇, containing octahedral [ReH₆]⁵⁻ complex anions, 97
- Magnetic properties
¹⁵⁵Gd Mössbauer effect and magnetic properties of Al-substituted Gd₂Fe₁₇, 25
- new ternary iron chalcogenides A₉Fe₂X₇ (A ≡ K, Rb, Cs; X ≡ S, Se): synthesis, crystal structure and magnetic properties, 83
- magnetic properties of lanthanum manganite and valence equilibria of manganese, 91
- Manganese
magnetic properties of lanthanum manganite and valence equilibria of manganese, 91
- Materials design
information-predicting systems for the design of new materials, 159
- Melting behaviour
search for regularities in the melting points of AB compounds, 197
- Metallic glasses
local atomic environments of hard magnets, metallic glasses, and icosahedral phases, 271
- Mössbauer spectroscopy
¹⁵⁵Gd Mössbauer effect and magnetic properties of Al-substituted Gd₂Fe₁₇, 25
- Neodymium
room temperature variation in the threshold fields in R_xY_{1-x}Mn₆Sn₆ (R ≡ Ce–Nd, Sm, Gd–Ho) solid solutions, 101
- New materials
quantum diagrams and the prediction of new materials, 131
- Niobium telluride
NbFe_{1.28}Te₃, a quasi-layered ternary niobium telluride compound, 21
- Nuclear fuel
development of TRAIL, a simulation code for the molten salt electrorefining of spent nuclear fuel, 7
- Nuclear magnetic resonance
the IR, NMR (^1H , ^{13}C) and electronic spectra of the complexes *cis*-[Rh(CO)₂(pyridine-*N*-oxide)(X)] (X ≡ Cl, Br), 69
- Oxidation resistance
properties of Fe₃Al matrix composites with Al₂O₃ particle dispersions, 29
- Oxidation stability
oxidation stability of B₄C–Me_xB_y composite materials, 87
- Oxides
first principles methods for structural trends in oxides: applications to crystalline silica, 137
atomic environment classification of the rhombohedral “intermetallic” structure types, 243
- Particle dispersion
properties of Fe₃Al matrix composites with Al₂O₃ particle dispersions, 29
- Plastic behaviour
effect of compositional deviations from stoichiometry on the plastic behaviour of Ti₃Al single crystals, 17
- Predictive techniques
information-predicting systems for the design of new materials, 159
- Quantum diagrams
quantum structure diagrams and structure–property correlations, 127
quantum diagrams and the prediction of new materials, 131

- Regularities
 search for regularities in the melting points of AB compounds, 197
- Rhenium
 trimagnesium rhenium(I) heptahydride, Mg_3ReH_7 , containing octahedral $[\text{ReH}_6]^{5-}$ complex anions, 97
- Ruthenium
 vapour pressures and standard molar enthalpy of sublimation of crystalline tris(pentane-2,4-dionato)-ruthenium(III), 105
- Samarium
 room temperature variation in the threshold fields in $\text{R}_x\text{Y}_{1-x}\text{Mn}_6\text{Sn}_6$ ($\text{R} \equiv \text{Ce-Nd, Sm, Gd-Ho}$) solid solutions, 101
- Scandium
 further compounds related to the $\alpha\text{-Ba}_2\text{ScAlO}_5$ type: $\text{Ba}_6\text{Rh}_{2.33}\text{Yb}_2\text{Al}_{1.67}\text{O}_{15}$, $\text{Ba}_{5.5}\text{Ca}_{0.5}\text{Rh}_2\text{Y}_2\text{Al}_2\text{O}_{15}$ and $\text{Ba}_6\text{Rh}_4\text{Al}_2\text{O}_{15}$, 51
- Selenides
 condensed tetrakaidecahedral clusters. The crystal structure of NiTa_8Se_8 , 57
- Simplicity principles
 statistical studies of intermetallics stressing the validity of three principles, 167
- Single crystals
 further compounds related to the $\alpha\text{-Ba}_2\text{ScAlO}_5$ type: $\text{Ba}_6\text{Rh}_{2.33}\text{Yb}_2\text{Al}_{1.67}\text{O}_{15}$, $\text{Ba}_{5.5}\text{Ca}_{0.5}\text{Rh}_2\text{Y}_2\text{Al}_2\text{O}_{15}$ and $\text{Ba}_6\text{Rh}_4\text{Al}_2\text{O}_{15}$, 51
- Stability
 structural stability, local topology and electron count in small s-valent clusters, 145
- Standardization
 standardization of crystal structure data as an aid to the classification of crystal structure types, 291
- Structural maps
 some electronic aspects of structural maps, 281
- Structure determination
 trimagnesium rhenium(I) heptahydride, Mg_3ReH_7 , containing octahedral $[\text{ReH}_6]^{5-}$ complex anions, 97
- Superconductors
 description of layered structures — applications to high T_c superconductors, 153
- Symmetry principles
 statistical studies of intermetallics stressing the validity of three principles, 167
- Synthesis
 synthesis, structure and thermal stability of $\text{Yb}_4\text{Mg}_4\text{Fe}_3\text{H}_{22}$, 65
 new ternary iron chalcogenides $\text{A}_9\text{Fe}_2\text{X}_7$ ($\text{A} \equiv \text{K, Rb, Cs; X} \equiv \text{S, Se}$): synthesis, crystal structure and magnetic properties, 83
 trimagnesium rhenium(I) heptahydride, Mg_3ReH_7 , containing octahedral $[\text{ReH}_6]^{5-}$ complex anions, 97
- Systematics
 calculations of systematics in B2 structure 3d transition metal aluminides, 229
- Tantalum
 condensed tetrakaidecahedral clusters. The crystal structure of NiTa_8Se_8 , 57
- Terbium
 room temperature variation in the threshold fields in $\text{R}_x\text{Y}_{1-x}\text{Mn}_6\text{Sn}_6$ ($\text{R} \equiv \text{Ce-Nd, Sm, Gd-Ho}$) solid solutions, 101
- Thermal stability
 synthesis, structure and thermal stability of $\text{Yb}_4\text{Mg}_4\text{Fe}_3\text{H}_{22}$, 65
- Thermodynamics
 thermodynamic and transport properties of electroceramic oxide systems, 217
- Threshold field variations
 room temperature variation in the threshold fields in $\text{R}_x\text{Y}_{1-x}\text{Mn}_6\text{Sn}_6$ ($\text{R} \equiv \text{Ce-Nd, Sm, Gd-Ho}$) solid solutions, 101
- Topology
 structural stability, local topology and electron count in small s-valent clusters, 145
- Transition metal aluminides
 calculations of systematics in B2 structure 3d transition metal aluminides, 229
- Transition metals
 standard enthalpies of formation of 5d aluminides by high-temperature direct synthesis calorimetry, 75
- Transportation
 thermodynamic and transport properties of electroceramic oxide systems, 217
- Valence equilibria
 magnetic properties of lanthanum manganite and valence equilibria of manganese, 91
- Valency
 a covalent view of chemical bonding in Laves phases $\text{CaLi}_x\text{Al}_{2-x}$, 109
- Vapour pressures
 vapour pressures and standard molar enthalpy of sublimation of crystalline tris(pentane-2,4-dionato)-ruthenium(III), 105
- Volume effects
 volume effects in rare earth intermetallic compounds, 213
- X-ray diffraction
 investigations of ordered structures in boron-containing Pd_3Mn alloys, 35
 the formation of the L1_2 ordered structure in hypostoichiometric Pd_3Mn alloys containing interstitial boron, 43