

Subject Index of Volumes 614–615

Alkyne

New alkyne bridged mixed-metal clusters and studies of their activity for catalytic hydrosilylation of alkynes, 75

Amino acid

Synthesis of a water soluble boron neutron capture therapy agent: 1-amino-3-[2-(7-{3-[2-(2-hydroxymethyl-ethoxy)-1-(2-hydroxy-1-hydroxymethyl-ethoxymethyl)ethoxy]propyl}-1,7-di-carba-*closo*-dodecaboran-1-yl)ethyl]cyclobutanecarboxylic acid, 255

Aminoborylphosphanes

Synthesis and coordination behavior of a zirconocene bis(borylphosphane), 99

Arene ligands

Transformation of cyclohexadiene on an Fe₃P frame: cluster complexes with hexadiene, cyclohexadiene and arene ligands, 158

Arsenic

Homoleptic triisopropylsilylarsandiides of magnesium and divalent tin, 70

Asymmetric

Asymmetric synthesis of the Japanese beetle pheromone via boronic esters, 314

Azaborane

Synthesis of N-substituted derivatives of the *hypho*-(amine)-(amino)B₈H₁₁ system, 215

B-frame bimetallics

B-frame supported bimetallics. 'Composite cluster' compounds and the structures of [2,7-(η⁵-C₅Me₅)₂-*nido*-2,7,8,6-Ir₂CSB₆H₈] and its 9-chloro derivative. Synchrotron and conventional X-ray studies, 57

Bi-functional

Convenient syntheses, spectroscopic and structural characterisation of bi-functional boranes, 188

Binary boranes

Kinetic studies of reactions of hexaborane(10) with other binary boranes in the gas phase, 144

Bis-(3,5-di-*tert*-butyl-2-phenol)oxamide

New hexacyclic binuclear tin complexes derived from bis-(3,5-di-*tert*-butyl-2-phenol)oxamide, 283

Bis-(3-phenylpyrazolyl)dihydroborate

Synthesis and crystal structure of [H₂B(3-Phpz)₂]₂Zn, 305

BNCT

Synthesis of a water soluble boron neutron capture therapy agent: 1-amino-3-[2-(7-{3-[2-(2-hydroxymethyl-ethoxy)-1-(2-hydroxy-1-hydroxymethyl-ethoxymethyl)ethoxy]propyl}-1,7-di-carba-*closo*-dodecaboran-1-yl)ethyl]cyclobutanecarboxylic acid, 255

¹¹B-NMR

Structures of carborane cations derived from the reaction of 2-propyl cation with diborane: DFT/IGLO/GIAO-MP2/NMR investigations of alkylborane and alkylcarborane patterns, 195

¹¹B nuclear shielding

Bond rotamers and calculated ¹¹B-NMR chemical shifts in boron-containing cluster chemistry. Some effects in the {*nido*-7,8,10-PC₂B₈} system, 61

Borane cluster

B-frame supported bimetallics. 'Composite cluster' compounds and the structures of [2,7-(η⁵-C₅Me₅)₂-*nido*-2,7,8,6-Ir₂CSB₆H₈] and its 9-chloro derivative. Synchrotron and conventional X-ray studies, 57

Boranes

Bond rotamers and calculated ¹¹B-NMR chemical shifts in boron-containing cluster chemistry. Some effects in the {*nido*-7,8,10-PC₂B₈} system, 61

Convenient syntheses, spectroscopic and structural characterisation of bi-functional boranes, 188

Synthesis and characterization of μ,μ'-M(B₅H₈)₂ (M = Cd, Hg and Zn): a reassignment of the NMR spectra for 2,3-μ-metallo derivatives of pentaborane(9), 223

Synthesis of N-substituted derivatives of the *hypho*-(amine)-(amino)B₈H₁₁ system, 215

The use of boron clusters in the rational design of boronated nucleosides for neutron capture therapy of cancer, 37

Boron

Boride cluster fusion through copper and silver. Crystal structure of [(Ph₃P)₂N][(HRu₄(CO)₁₂BH)₂Ag], 202

Comparison of the geometric and molecular orbital structures of (Cp*Cr)₂B₄H₈ and (Cp*Re)₂B₄H₈, Cp* = η⁵-C₅Me₅. Structural consequences of delocalized electronic unsaturation in a metallaborane cluster, 92

Convenient syntheses, spectroscopic and structural characterisation of bi-functional boranes, 188

Fluorination studies of the [com-3,3'-Co(3,1,2-CoC₂B₉H₁₁)₂]⁻¹ ion, 120

Platinum complexes of stanna-*closo*-dodecaborate, 137

The chemistry of bridged borylene complexes, 18

The use of boron clusters in the rational design of boronated nucleosides for neutron capture therapy of cancer, 37

Boron clusters

Polyhedral-based nonlinear optical materials: Part 1. Theoretical investigation of some new high nonlinear optical response compounds involving carboranes and charged aromatic donors and acceptors, 309

Boron hydrides

Symmetric and asymmetric cleavage of the lighter boron hydrides and of metal salts – the role of the dielectric constant, 5

Boronic ester

Asymmetric synthesis of the Japanese beetle pheromone via boronic esters, 314

Borylene complexes

The chemistry of bridged borylene complexes, 18

Bridge bonds

Symmetric and asymmetric cleavage of the lighter boron hydrides and of metal salts – the role of the dielectric constant, 5

Cage compounds

Homoleptic triisopropylsilylarsandiides of magnesium and divalent tin, 70

Carbametallaborane

Closo and semipseudocloso forms of the same carbametallaborane: synthesis and spectroscopic and crystallographic characterisation of 1-CCPh-2-Ph-3-(η -L)-3,1,2-RhC₂B₉H₉ (L = C₅H₅ and C₅Me₅): Part 25. Steric effects in heteroboranes, 153

Carbathiaborane cluster

B-frame supported bimetallics. 'Composite cluster' compounds and the structures of [2,7-(η^5 -C₅Me₅)₂-*nido*-2,7,8,6-Ir₂CSB₆H₈] and its 9-chloro derivative. Synchrotron and conventional X-ray studies, 57

Carbonyl

Monocarbollide complexes of osmium: X-ray crystal structure of [Os(CO)₃{ η^5 -5-(NMe₃)-7-CB₁₀H₁₀}], 208

New Ni–Rh carbonyl clusters with unprecedented structural and electronic features: synthesis and X-ray structure of [NEt₄]₃[Ni₁₀Rh(CO)₁₉]-C₂H₅CN, [NMe₃CH₂Ph]₃[Ni₆Rh₃(CO)₁₇] and [NEt₄]₃[Ni₉Rh₃(CO)₂₂], 294

Carbonyl cluster

Reactivity of the mixed-metal cluster [Os₆(CO)₁₇(Au₂dppm)] towards gold electrophiles (dppm = Ph₂PCH₂PPh₂), 231

Carborane cation

Structures of carborane cations derived from the reaction of 2-propyl cation with diborane: DFT/IGLO/GIAO-MP2/NMR investigations of alkylborane and alkylcarborane patterns, 195

Carboranes

Forced *exo-nido* rhoda and ruthenacarboranes as catalyst precursors: a review, 48

Fluorination studies of the [commo-3,3'-Co(3,1,2-CoC₂B₉H₁₁)₂⁻¹] ion, 120

Hybrid diboroly/carboranyl triple-decker compounds: [(η^5 -pentamethylcyclopentadienyl)ruthenium(μ , η^5 -1,3-diboroly)-rhodiumcarboranyl] complexes, 125

Monocarbollide complexes of osmium: X-ray crystal structure of [Os(CO)₃{ η^5 -5-(NMe₃)-7-CB₁₀H₁₀}], 208

Polyhedral-based nonlinear optical materials: Part 1. Theoretical investigation of some new high nonlinear optical response compounds involving carboranes and charged aromatic donors and acceptors, 309

Rhodium cyclooctadiene complexes of the weakly co-ordinating carborane anion [*closo*-CB₁₁H₁₂]⁻. Isolation and crystal structures of [(COD)Rh(η^2 -CB₁₁H₁₂)] and [(COD)Rh-(THF)₂][CB₁₁H₁₂], 113

Synthesis and characterization of half- and full-sandwich lanthanacarboranes of the C₂B₉-carborane ligand. X-ray crystal structures of [LnCl₂(THF)₅][*nido*-C₂B₉H₁₂] (Ln = Y, Yb), 107

Synthesis of a water soluble boron neutron capture therapy agent: 1-amino-3-[2-(7-{3-[2-(2-hydroxymethyl-ethoxy)-1-(2-hydroxy-1-hydroxymethyl-ethoxymethyl)ethoxy]propyl}-1,7-di-carba-*closo*-dodecaboran-1-yl)ethyl]cyclobutanecarboxylic acid, 255

The use of boron clusters in the rational design of boronated nucleosides for neutron capture therapy of cancer, 37

Catalysis

Forced *exo-nido* rhoda and ruthenacarboranes as catalyst precursors: a review, 48

New alkyne bridged mixed-metal clusters and studies of their activity for catalytic hydrosilylation of alkynes, 75

Catalyst precursor

New Group 9 metal complexes containing *N,P*-chelate ligand system. Synthesis, characterization and application to catalytic hydrogenation, 83

C₂B₄-cage

Is there a future for the continued development of the chemistry of small cage C₂B₄-carborane? A historical perspective, 10

Chelate

New Group 9 metal complexes containing *N,P*-chelate ligand system. Synthesis, characterization and application to catalytic hydrogenation, 83

Chemical shifts

Structures of carborane cations derived from the reaction of 2-propyl cation with diborane: DFT/IGLO/GIAO-MP2/NMR investigations of alkylborane and alkylcarborane patterns, 195

Chromium

Comparison of the geometric and molecular orbital structures of (Cp*Cr)₂B₄H₈ and (Cp*Re)₂B₄H₈, Cp* = η^5 -C₅Me₅. Structural consequences of delocalized electronic unsaturation in a metallaborane cluster, 92

Closo

Closo and semipseudocloso forms of the same carbametallaborane: synthesis and spectroscopic and crystallographic characterisation of 1-CCPh-2-Ph-3-(η -L)-3,1,2-RhC₂B₉H₉ (L = C₅H₅ and C₅Me₅): Part 25. Steric effects in heteroboranes, 153

closo-Dicarbaheptaboranes

Gas-phase reactions of *nido*-1-methylpentaborane with propyne and 2-pentyne. Formation of B-alkyl *nido* and *closo* carbaboranes, 262

Cluster

Comparison of the geometric and molecular orbital structures of (Cp*Cr)₂B₄H₈ and (Cp*Re)₂B₄H₈, Cp* = η^5 -C₅Me₅. Structural consequences of delocalized electronic unsaturation in a metallaborane cluster, 92

New alkyne bridged mixed-metal clusters and studies of their activity for catalytic hydrosilylation of alkynes, 75

New Ni–Rh carbonyl clusters with unprecedented structural and electronic features: synthesis and X-ray structure of [NEt₄]₃[Ni₁₀Rh(CO)₁₉]-C₂H₅CN, [NMe₃CH₂Ph]₃[Ni₆Rh₃(CO)₁₇] and [NEt₄]₃[Ni₉Rh₃(CO)₂₂], 294

Platinum complexes of stanna-*closo*-dodecaborate, 137

Cluster clathrate

Molecular and crystal structure of an iodo-gold-silver-platinum cluster, [(Ph₃P)₆Au₆Ag₆Pt(AgI₃)₂](THF)₂, with a trimetallic icosahedral core capped with two planar [AgI₃] units, 66

Cluster complexes

Transformation of cyclohexadiene on an Fe₃P frame: cluster complexes with hexadiene, cyclohexadiene and arene ligands, 158

Cluster fusion

Boride cluster fusion through copper and silver. Crystal structure of [(Ph₃P)₂N][(HRu₄(CO)₁₂BH)₂Ag], 202

Cobalt bis(dicarbollide) anion

Fluorination studies of the [commo-3,3'-Co(3,1,2-CoC₂B₉H₁₁)₂⁻¹] ion, 120

Composite cluster

B-frame supported bimetallics. 'Composite cluster' compounds and the structures of [2,7-(η^5 -C₅Me₅)₂-*nido*-2,7,8,6-Ir₂CSB₆H₈] and its 9-chloro derivative. Synchrotron and conventional X-ray studies, 57

Copper

Boride cluster fusion through copper and silver. Crystal structure of [(Ph₃P)₂N][(HRu₄(CO)₁₂BH)₂Ag], 202

- Covalent product
Symmetric and asymmetric cleavage of the lighter boron hydrides and of metal salts – the role of the dielectric constant, 5
- Crystallographic characterisation
Closely and semipseudoclose forms of the same carbametallaborane: synthesis and spectroscopic and crystallographic characterisation of 1-CCPh-2-Ph-3-(η -L)-3,1,2-RhC₂B₉H₉ (L = C₃H₅ and C₃Me₃): Part 25. Steric effects in heteroboranes, 153
- Crystal structure
Monocarbollide complexes of osmium: X-ray crystal structure of [Os(CO)₃{ η ⁵-5-(NMe₃)-7-CB₁₀H₁₀}], 208
Synthesis of N-substituted derivatives of the *hypho*-(amine)-(amino)B₈H₁₁ system, 215
- Cyanide bridging
Oligonuclear cyanide complexes from silver containing building blocks, 131
- Cyclohexadiene
Transformation of cyclohexadiene on an Fe₃P frame: cluster complexes with hexadiene, cyclohexadiene and arene ligands, 158
- Cyclopentadienyl compounds
Polyhedral-based nonlinear optical materials: Part 1. Theoretical investigation of some new high nonlinear optical response compounds involving carboranes and charged aromatic donors and acceptors, 309
- Cyclopropanation
Forced *exo-nido* rhoda and ruthenacarboranes as catalyst precursors: a review, 48
- DFT/GIAO structural/NMR calculations
Bond rotamers and calculated ¹¹B-NMR chemical shifts in boron-containing cluster chemistry. Some effects in the {*nido*-7,8,10-PC₂B₈} system, 61
- Diagmagnetic
Synthesis, characterization, structural and theoretical analysis of a series of electron deficient, monomeric thallium iron carbonylate isostructural and isolobal to diiron nonacarbonyl, 243
- Diboroles
Hybrid diborolyl/carboranyl triple-decker compounds: [(η ⁵-pentamethylcyclopentadienyl)ruthenium(μ , η ⁵-1,3-diborolyl)rhodiumcarboranyl] complexes, 125
- Dielectric constant
Symmetric and asymmetric cleavage of the lighter boron hydrides and of metal salts – the role of the dielectric constant, 5
- Dihydridoborates
Hydridoborates and hydridoborato metallates: Part 26. Preparation and structures of dihydridoborates of lithium and potassium, 168
- Electrochemistry
Oligonuclear cyanide complexes from silver containing building blocks, 131
- Eleven-vertex polyhedral
Eleven-vertex polyhedral metalladicarborane chemistry. Reactions of neutral *nido*-5,6-C₂B₈H₁₂ and the [*nido*-6,9-C₂B₈H₁₀]²⁻ anion to give formally *closo* isomeric 1-(arene) and 1-(cyclopentadiene)-1,2,4- and 1,2,3-metalladicarborane-decaboranes, and some substituent chemistry. Chiral separations, and crystal and molecular structures of [5-Br-1-(η ⁶-C₆Me₆)-1,2,4-RuC₂B₈H₉] and [2-Me-1-(η ⁵-C₃Me₃)-1,2,3-RhC₂B₈H₉], 269
- Energetics
Structures of carborane cations derived from the reaction of 2-propyl cation with diborane: DFT/IGLO/GIAO-MP2/
- NMR investigations of alkylborane and alkylcarborane patterns, 195
- Ferracarboranes
Chemistry of nickel and iron bis(dicarbollides). A review, 27
- Fluorination
Fluorination studies of the [commo-3,3'-Co(3,1,2-CoC₂B₉H₁₁)₂]⁻¹ ion, 120
- GIAO structural/NMR calculations
Gas-phase reactions of *nido*-1-methylpentaborane with propyne and 2-pentyne. Formation of B-alkyl *nido* and *closo* carbaboranes, 262
- Gold
Reactivity of the mixed-metal cluster [Os₆(CO)₁₇(Au₂dppm)] towards gold electrophiles (dppm = Ph₂PCH₂PPh₂), 231
- Group 12 metals
Synthesis and characterization of μ , μ' -M(B₅H₈)₂ (M = Cd, Hg and Zn): a reassignment of the NMR spectra for 2,3- μ -metallo derivatives of pentaborane(9), 223
- Heteronuclear clusters
Molecular and crystal structure of an iodo-gold-silver-platinum cluster, [(Ph₃P)₆Au₆Ag₆Pt(AgI₃)₂](THF)₂, with a trimetallic icosahedral core capped with two planar [AgI₃] units, 66
- Hexaborane(10)
Kinetic studies of reactions of hexaborane(10) with other binary boranes in the gas phase, 144
- Hexacyclic binuclear tin complexes
New hexacyclic binuclear tin complexes derived from bis-(3,5-di-*tert*-butyl-2-phenol)oxamide, 283
- History of carboranes
Is there a future for the continued development of the chemistry of small cage C₂B₄-carborane? A historical perspective, 10
- Hydridoborates and hydridoborato metallates
Hydridoborates and hydridoborato metallates: Part 26. Preparation and structures of dihydridoborates of lithium and potassium, 168
- Hydrogenation
Forced *exo-nido* rhoda and ruthenacarboranes as catalyst precursors: a review, 48
New Group 9 metal complexes containing *N,P*-chelate ligand system. Synthesis, characterization and application to catalytic hydrogenation, 83
- Hydrosilylation
New alkyne bridged mixed-metal clusters and studies of their activity for catalytic hydrosilylation of alkynes, 75
- Hypho* cluster
Synthesis of N-substituted derivatives of the *hypho*-(amine)-(amino)B₈H₁₁ system, 215
- Icosahedron
Molecular and crystal structure of an iodo-gold-silver-platinum cluster, [(Ph₃P)₆Au₆Ag₆Pt(AgI₃)₂](THF)₂, with a trimetallic icosahedral core capped with two planar [AgI₃] units, 66
- Inter nuclear separation
Synthesis, characterization, structural and theoretical analysis of a series of electron deficient, monomeric thallium iron carbonylate isostructural and isolobal to diiron nonacarbonyl, 243
- Ionic coupling
Reactivity of the mixed-metal cluster [Os₆(CO)₁₇(Au₂dppm)] towards gold electrophiles (dppm = Ph₂PCH₂PPh₂), 231
- Ionic product
Symmetric and asymmetric cleavage of the lighter boron hydrides and of metal salts – the role of the dielectric constant, 5

Iridium

New Group 9 metal complexes containing *N,P*-chelate ligand system. Synthesis, characterization and application to catalytic hydrogenation, 83

Iron

The chemistry of bridged borylene complexes, 18

Iron lone pair

Synthesis, characterization, structural and theoretical analysis of a series of electron deficient, monomeric thallium iron carbonylate isostructural and isolobal to diiron nonacarbonyl, 243

Isomerization

Forced *exo-nido* rhoda and ruthenacarboranes as catalyst precursors: a review, 48

Isonido geometry

Eleven-vertex polyhedral metalladiborane chemistry. Reactions of neutral *nido*-5,6- $C_2B_8H_{12}$ and the [*nido*-6,9- $C_2B_8H_{10}$]²⁻ anion to give formally *closo* isomeric 1-(arene) and 1-(cyclopentadiene)-1,2,4- and 1,2,3-metalladiborane-decaboranes, and some substituent chemistry. Chiral separations, and crystal and molecular structures of [5-Br-1-($\eta^6-C_6Me_6$)-1,2,4-Ru $C_2B_8H_9$] and [2-Me-1-($\eta^5-C_5Me_5$)-1,2,3-Rh $C_2B_8H_9$], 269

Kinetic studies

Kinetic studies of reactions of hexaborane(10) with other binary boranes in the gas phase, 144

Lanthanacarboranes

Synthesis and characterization of half- and full-sandwich lanthanacarboranes of the C_2B_9 -carborane ligand. X-ray crystal structures of [LnCl₂(THF)₅][*nido*- $C_2B_9H_{12}$] (Ln = Y, Yb), 107

Lithium

Hydridoborates and hydridoborato metallates: Part 26. Preparation and structures of dihydridoborates of lithium and potassium, 168

Magnesium

Homoleptic triisopropylsilylarsandiides of magnesium and divalent tin, 70

Manganese

The chemistry of bridged borylene complexes, 18

Mechanism

Kinetic studies of reactions of hexaborane(10) with other binary boranes in the gas phase, 144

Metalations

Homoleptic triisopropylsilylarsandiides of magnesium and divalent tin, 70

Metal carbonyls

Synthesis and coordination behavior of a zirconocene bis(borylphosphane), 99

Metal cluster compounds

Polycarbon linked metal cluster compounds, 318

Metallaborane

Comparison of the geometric and molecular orbital structures of (Cp*Cr)₂B₄H₈ and (Cp*Re)₂B₄H₈, Cp* = $\eta^5-C_5Me_5$. Structural consequences of delocalized electronic unsaturation in a metallaborane cluster, 92

Metallacarathiaborane

B-frame supported bimetallics. 'Composite cluster' compounds and the structures of [2,7-($\eta^5-C_5Me_5$)₂-*nido*-2,7,8,6-Ir₂CSB₆H₈] and its 9-chloro derivative. Synchrotron and conventional X-ray studies, 57

Metallacarboranes

Chemistry of nickel and iron bis(dicarbollides). A review, 27

Forced *exo-nido* rhoda and ruthenacarboranes as catalyst precursors: a review, 48

Is there a future for the continued development of the chemistry of small cage C_2B_4 -carborane? A historical perspective, 10
Synthesis and characterization of half- and full-sandwich lanthanacarboranes of the C_2B_9 -carborane ligand. X-ray crystal structures of [LnCl₂(THF)₅][*nido*- $C_2B_9H_{12}$] (Ln = Y, Yb), 107

Metalladiborane

Eleven-vertex polyhedral metalladiborane chemistry. Reactions of neutral *nido*-5,6- $C_2B_8H_{12}$ and the [*nido*-6,9- $C_2B_8H_{10}$]²⁻ anion to give formally *closo* isomeric 1-(arene) and 1-(cyclopentadiene)-1,2,4- and 1,2,3-metalladiborane-decaboranes, and some substituent chemistry. Chiral separations, and crystal and molecular structures of [5-Br-1-($\eta^6-C_6Me_6$)-1,2,4-Ru $C_2B_8H_9$] and [2-Me-1-($\eta^5-C_5Me_5$)-1,2,3-Rh $C_2B_8H_9$], 269

Metallorboranes

Synthesis and characterization of μ, μ' -M(B₅H₈)₂ (M = Cd, Hg and Zn): a reassignment of the NMR spectra for 2,3- μ -metalloderivatives of pentaborane(9), 223

Metal-metal interactions

Oligonuclear cyanide complexes from silver containing building blocks, 131

Metal-metal triple bonds

Octakis(trimethylsilylmethyl)dioxotetramolybdenum. A novel tetranuclear compound with two localized metal-metal triple bonds, 238

Metal salts

Symmetric and asymmetric cleavage of the lighter boron hydrides and of metal salts – the role of the dielectric constant, 5

1-Methylpentaborane

Gas-phase reactions of *nido*-1-methylpentaborane with propyne and 2-pentyne. Formation of B-alkyl *nido* and *closo* carboranes, 262

Mixed metal clusters

Molecular and crystal structure of an iodo-gold-silver-platinum cluster, [(Ph₃P)₆Au₆Ag₆Pt(AgI₃)₂](THF)₂, with a trimetallic icosahedral core capped with two planar [AgI₃] units, 66

MNDO calculations

Polyhedral-based nonlinear optical materials: Part 1. Theoretical investigation of some new high nonlinear optical response compounds involving carboranes and charged aromatic donors and acceptors, 309

MO

Comparison of the geometric and molecular orbital structures of (Cp*Cr)₂B₄H₈ and (Cp*Re)₂B₄H₈, Cp* = $\eta^5-C_5Me_5$. Structural consequences of delocalized electronic unsaturation in a metallaborane cluster, 92

Monoheterodicarbaborane clusters

Bond rotamers and calculated ¹¹B-NMR chemical shifts in boron-containing cluster chemistry. Some effects in the {*nido*-7,8,10-PC₂B₈} system, 61

Negatively charged monomer

Synthesis, characterization, structural and theoretical analysis of a series of electron deficient, monomeric thallium iron carbonylate isostructural and isolobal to diiron nonacarbonyl, 243

Neutron capture therapy

The use of boron clusters in the rational design of boronated nucleosides for neutron capture therapy of cancer, 37

Nickel

New Ni-Rh carbonyl clusters with unprecedented structural and electronic features: synthesis and X-ray structure of [NEt₄]₃[Ni₁₀Rh(CO)₁₉]-C₂H₅CN, [NMe₃CH₂Ph]₃[Ni₆Rh₃(CO)₁₇] and [NEt₄]₃[Ni₉Rh₃(CO)₂₂], 294

Nickelacarboranes

Chemistry of nickel and iron bis(dicarbollides). A review, 27
nido-Dicarbaheptaborane clusters

Gas-phase reactions of *nido*-1-methylpentaborane with propyne and 2-pentyne. Formation of B-alkyl *nido* and *closo* carbaboranes, 262

N ligands

Synthesis of N-substituted derivatives of the *hypho*-(amine)-(amino)B₈H₁₁ system, 215

NMR

B-frame supported bimetallics. 'Composite cluster' compounds and the structures of [2,7-(η⁵-C₅Me₅)₂-*nido*-2,7,8,6-Ir₂CSB₆H₈] and its 9-chloro derivative. Synchrotron and conventional X-ray studies, 57

NMR spectroscopy

Synthesis and characterization of μ,μ'-M(B₅H₈)₂ (M = Cd, Hg and Zn): a reassignment of the NMR spectra for 2,3-μ-metallo derivatives of pentaborane(9), 223

Synthesis of N-substituted derivatives of the *hypho*-(amine)-(amino)B₈H₁₁ system, 215

Nonlinear optics

Polyhedral-based nonlinear optical materials: Part 1. Theoretical investigation of some new high nonlinear optical response compounds involving carboranes and charged aromatic donors and acceptors, 309

Nucleophilic substitution

Platinum complexes of stanna-*closo*-dodecaborate, 137

Nucleosides

The use of boron clusters in the rational design of boronated nucleosides for neutron capture therapy of cancer, 37

o-Carborane

New Group 9 metal complexes containing *N,P*-chelate ligand system. Synthesis, characterization and application to catalytic hydrogenation, 83

Octakis(trimethylsilylmethyl)dioxotetramolybdenum

Octakis(trimethylsilylmethyl)dioxotetramolybdenum. A novel tetranuclear compound with two localized metal-metal triple bonds, 238

Optical resolution of boron cluster

Eleven-vertex polyhedral metalladiborane chemistry. Reactions of neutral *nido*-5,6-C₂B₈H₁₂ and the [*nido*-6,9-C₂B₈H₁₀]²⁻ anion to give formally *closo* isomeric 1-(arene) and 1-(cyclopentadiene)-1,2,4- and 1,2,3-metalladiborane-decaboranes, and some substituent chemistry. Chiral separations, and crystal and molecular structures of [5-Br-1-(η⁶-C₆Me₆)-1,2,4-RuC₂B₈H₉] and [2-Me-1-(η²-C₅Me₅)-1,2,3-RhC₂B₈H₉], 269

Organolanthanides

Synthesis and characterization of half- and full-sandwich lanthanacarboranes of the C₂B₉-carborane ligand. X-ray crystal structures of [LnCl₂(THF)₅][*nido*-C₂B₉H₁₂] (Ln = Y, Yb), 107

Osmium

Monocarbollide complexes of osmium: X-ray crystal structure of [Os(CO)₃{η⁵-5-(NMe₃)-7-CB₁₀H₁₀}], 208

Reactivity of the mixed-metal cluster [Os₆(CO)₁₇(Au₂dppm)] towards gold electrophiles (dppm = Ph₂PCH₂PPh₂), 231

Oxo bridges: Mo-Mo

Octakis(trimethylsilylmethyl)dioxotetramolybdenum. A novel tetranuclear compound with two localized metal-metal triple bonds, 238

Pentaborane

Is there a future for the continued development of the chemistry of small cage C₂B₄-carborane? A historical perspective, 10

Pheromone

Asymmetric synthesis of the Japanese beetle pheromone via boronic esters, 314

Platinum

New alkyne bridged mixed-metal clusters and studies of their activity for catalytic hydrosilylation of alkynes, 75

Platinum complexes

Platinum complexes of stanna-*closo*-dodecaborate, 137

Polyol

Synthesis of a water soluble boron neutron capture therapy agent: 1-amino-3-[2-(7-{3-[2-(2-hydroxymethyl)-ethoxy]-1-(2-hydroxy-1-hydroxymethyl-ethoxymethyl)ethoxy]propyl}-1,7-di-carba-*closo*-dodecaboran-1-yl)ethyl]cyclobutane-carboxylic acid, 255

Potassium

Hydridoborates and hydridoborato metallates: Part 26. Preparation and structures of dihydridoborates of lithium and potassium, 168

Propargylborane

Asymmetric synthesis of the Japanese beetle pheromone via boronic esters, 314

Pseudocloso

Closo and semipseudocloso forms of the same carbametallaborane: synthesis and spectroscopic and crystallographic characterisation of 1-CCPh-2-Ph-3-(η-L)-3,1,2-RhC₂B₉H₉ (L = C₅H₅ and C₅Me₅): Part 25. Steric effects in heteroboranes, 153

Rational drug design

The use of boron clusters in the rational design of boronated nucleosides for neutron capture therapy of cancer, 37

Rhenium

Comparison of the geometric and molecular orbital structures of (Cp*Cr)₂B₄H₈ and (Cp*Re)₂B₄H₈, Cp* = η⁵-C₅Me₅. Structural consequences of delocalized electronic unsaturation in a metallaborane cluster, 92

Rhodium

Hybrid diborolyl/carboranyl triple-decker compounds: [(η⁵-pentamethylcyclopentadienyl)ruthenium(μ,η⁵-1,3-diborolyl)rhodiumcarboranyl] complexes, 125

New Group 9 metal complexes containing *N,P*-chelate ligand system. Synthesis, characterization and application to catalytic hydrogenation, 83

New Ni-Rh carbonyl clusters with unprecedented structural and electronic features: synthesis and X-ray structure of [NEt₄]₃[Ni₁₀Rh(CO)₁₉]-C₂H₅CN, [NMe₃CH₂Ph]₃[Ni₆Rh₃(CO)₁₇] and [NEt₄]₃[Ni₉Rh₃(CO)₂₂], 294

Rhodium cyclooctadiene complexes of the weakly co-ordinating carborane anion [*closo*-CB₁₁H₁₂]⁻. Isolation and crystal structures of [(COD)Rh(η²-CB₁₁H₁₂)] and [(COD)-Rh(THF)₂][CB₁₁H₁₂], 113

Rotamers

Bond rotamers and calculated ¹¹B-NMR chemical shifts in boron-containing cluster chemistry. Some effects in the {*nido*-7,8,10-PC₂B₈} system, 61

Ruthenium

Boride cluster fusion through copper and silver. Crystal structure of [(Ph₃P)₂N][(HRu₄(CO)₁₂BH)₂Ag], 202

Hybrid diborolyl/carboranyl triple-decker compounds: [(η⁵-pentamethylcyclopentadienyl)ruthenium(μ,η⁵-1,3-diborolyl)rhodiumcarboranyl] complexes, 125

Monocarbollide complexes of osmium: X-ray crystal structure of [Os(CO)₃{η⁵-5-(NMe₃)-7-CB₁₀H₁₀}], 208

New alkyne bridged mixed-metal clusters and studies of their activity for catalytic hydrosilylation of alkynes, 75

Sandwich complexes

Chemistry of nickel and iron bis(dicarbollides). A review, 27

Sandwich compounds

Fluorination studies of the [commo-3,3'-Co(3,1,2-CoC₂B₉H₁₁)₂]⁻¹ ion, 120

Synthesis and characterization of half- and full-sandwich lanthanacarboranes of the C₂B₉-carborane ligand. X-ray crystal structures of [LnCl₂(THF)₅][*nido*-C₂B₉H₁₂] (Ln = Y, Yb), 107

Semipseudocloso

Closo and semipseudocloso forms of the same carbametallaborane: synthesis and spectroscopic and crystallographic characterisation of 1-CCPh-2-Ph-3-(η-L)-3,1,2-RhC₂B₉H₉ (L = C₅H₅ and C₅Me₅): Part 25. Steric effects in heteroboranes, 153

Silver

Boride cluster fusion through copper and silver. Crystal structure of [(Ph₃P)₂N][(HRu₄(CO)₁₂BH)₂Ag], 202

Small cage carborane

Is there a future for the continued development of the chemistry of small cage C₂B₄-carborane? A historical perspective, 10

Structure

Oligonuclear cyanide complexes from silver containing building blocks, 131

Structures of carborane cations derived from the reaction of 2-propyl cation with diborane: DFT/IGLO/GIAO-MP2/NMR investigations of alkylborane and alkylcarborane patterns, 195

Symmetrical cleavage

Symmetric and asymmetric cleavage of the lighter boron hydrides and of metal salts – the role of the dielectric constant, 5

Synchrotron

B-frame supported bimetallics. 'Composite cluster' compounds and the structures of [2,7-(η⁵-C₅Me₅)₂-*nido*-2,7,8,6-Ir₂CSB₆H₈] and its 9-chloro derivative. Synchrotron and conventional X-ray studies, 57

Tetrasubstituted benzene

Convenient syntheses, spectroscopic and structural characterisation of bi-functional boranes, 188

Theoretical calculations

Structures of carborane cations derived from the reaction of 2-propyl cation with diborane: DFT/IGLO/GIAO-MP2/NMR investigations of alkylborane and alkylcarborane patterns, 195

Thermolysis

Kinetic studies of reactions of hexaborane(10) with other binary boranes in the gas phase, 144

Thiaborane cluster

B-frame supported bimetallics. 'Composite cluster' compounds

and the structures of [2,7-(η⁵-C₅Me₅)₂-*nido*-2,7,8,6-Ir₂CSB₆H₈] and its 9-chloro derivative. Synchrotron and conventional X-ray studies, 57

Tin

Homoleptic triisopropylsilylarsandiides of magnesium and divalent tin, 70

Platinum complexes of stanna-*closo*-dodecaborate, 137

Trinuclear complexes

Oligonuclear cyanide complexes from silver containing building blocks, 131

Triple-decker complexes

Hybrid diborolyl/carboranyl triple-decker compounds: [(η⁵-pentamethylcyclopentadienyl)ruthenium(μ,η⁵-1,3-diborolyl)rhodiumcarboranyl] complexes, 125

Tropilium compounds

Polyhedral-based nonlinear optical materials: Part 1. Theoretical investigation of some new high nonlinear optical response compounds involving carboranes and charged aromatic donors and acceptors, 309

Unsymmetrical cleavage

Symmetric and asymmetric cleavage of the lighter boron hydrides and of metal salts – the role of the dielectric constant, 5

Weakly co-ordinating

Rhodium cyclooctadiene complexes of the weakly co-ordinating carborane anion [*closo*-CB₁₁H₁₂]⁻. Isolation and crystal structures of [(COD)Rh(η²-CB₁₁H₁₂)] and [(COD)-Rh(THF)₂][CB₁₁H₁₂], 113

X-ray

B-frame supported bimetallics. 'Composite cluster' compounds and the structures of [2,7-(η⁵-C₅Me₅)₂-*nido*-2,7,8,6-Ir₂CSB₆H₈] and its 9-chloro derivative. Synchrotron and conventional X-ray studies, 57

X-ray structure

New Ni–Rh carbonyl clusters with unprecedented structural and electronic features: synthesis and X-ray structure of [NEt₄]₃[Ni₁₀Rh(CO)₁₉]-C₂H₅CN, [NMe₃CH₂Ph]₃[Ni₆Rh₃(CO)₁₇] and [NEt₄]₃[Ni₉Rh₃(CO)₂₂], 294

Reactivity of the mixed-metal cluster [Os₆(CO)₁₇(Au₂dppm)] towards gold electrophiles (dppm = Ph₂PCH₂PPh₂), 231

Synthesis and crystal structure of [H₂B(3-Phpz)₂]₂Zn, 305

Zinc

Synthesis and crystal structure of [H₂B(3-Phpz)₂]₂Zn, 305

Zirconocene

Synthesis and coordination behavior of a zirconocene bis(borylphosphane), 99