# Subject Index of Volume 657 

## Acetamide

Synthesis and derivatization of the 2-amino-closo-decaborate anion $\left[2-\mathrm{B}_{10} \mathrm{H}_{9} \mathrm{NH}_{3}\right]^{-}, 163$
Alkynes
Reactivity of some poly-1-alkynylsilicon and -tin compounds towards triallylborane—routes to novel heterocycles, 146
Allylation
Allylboration of functionalized isoquinolines, 123
Allylboration
Allylboration of functionalized isoquinolines, 123
Amine
Synthesis and derivatization of the 2-amino-closo-decaborate anion $\left[2-\mathrm{B}_{10} \mathrm{H}_{9} \mathrm{NH}_{3}\right]^{-}, 163$
Arylboronic acids
Palladium-catalyzed cross-coupling reactions of arylboronic acids and 2-I- $p$-carborane, 267
Asymmetric synthesis
Chiral boronates - versatile reagents in asymmetric synthesis, 136 Azanonaborane

Azanonaborane-pyridine derivatives [( $\left.\left.\mathrm{R}^{\prime} \mathrm{C}_{5} \mathrm{H}_{4} \mathrm{~N}\right) \mathrm{B}_{8} \mathrm{H}_{11} \mathrm{NHR}^{\prime \prime}\right]$ : synthesis, structure and some molecular-orbital calculations, 205

## Aziridines

Allylboration of functionalized isoquinolines, 123

## Biaryls

Chiral boronates-versatile reagents in asymmetric synthesis, 136
BN fibers
Pyrolysis of poly[2,4,6-tri(methylamino)borazine] and its conversion into BN fibers, 91
Bond-critical point
Modulation of the $\mathrm{C}-\mathrm{C}$ distance in disubstituted $1,2-\mathrm{R}_{2}-0-$ carboranes. Crystal structure of closo $1,2-(\mathrm{SPh})_{2}-1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}$, 232
Bond modulation, closo-carboranes
Modulation of the $\mathrm{C}-\mathrm{C}$ distance in disubstituted $1,2-\mathrm{R}_{2}-\mathrm{o}-$ carboranes. Crystal structure of closo $1,2-(\mathrm{SPh})_{2}-1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}$, 232
Borane cluster compounds
The use of Kitaigorodskii's Aufbau principle in the solid-state study of crystalline borane compounds. A preliminary account, 20
Boranes
Allylboration of functionalized isoquinolines, 123
Chemistry on a metallathiaborane cluster Part 4: reactions of 11vertex rhodathiaboranes with bidentate phosphines and their subsequent rearrangements, 40
Borazine
Synthesis and structure of 2,4,6-tris[tris(dimethylamino)silylamino]borazine: $\left\{\left[\left(\mathrm{CH}_{3}\right)_{2} \mathrm{~N}\right]_{3} \mathrm{SiNH}\right\}_{3} \mathrm{~B}_{3} \mathrm{~N}_{3} \mathrm{H}_{3}, 71$
Boron
Porous boron nitride supports obtained from molecular precursors. Influence of the precursor formulation and of the thermal treatment on the properties of the BN ceramic, 98

## Boronates

Chiral boronates - versatile reagents in asymmetric synthesis, 136
X-ray analysis and structural characterization of 2-phenyl-6-aza-1,3-dioxa-2-borabenzocyclononenones, 194
Boron cluster compounds
Macropolyhedral boron-containing cluster chemistry: Models for intermediates en route to globular and discoidal megaloborane assemblies. Structures of $\left[\right.$ nido $\left.-\mathrm{B}_{10} \mathrm{H}_{12}\left(\text { nido }-\mathrm{B}_{5} \mathrm{H}_{8}\right)_{2}\right]$ and $\left[\left(\mathrm{CH}_{2} \mathrm{CH}_{2} \mathrm{C}_{5} \mathrm{H}_{4} \mathrm{~N}\right)\right.$-arachno $-\mathrm{B}_{10} \mathrm{H}_{10}\left(\mathrm{NC}_{5} \mathrm{H}_{4}\right.$-closo $\left.\left.-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right]$ as determined by synchrotron X-ray diffraction analysis, 256
Boron clusters
Recent developments in the chemistry of the nine-vertex monocarbaboranes, 3
Boron compounds
X-ray analysis and structural characterization of 2-phenyl-6-aza-1,3-dioxa-2-borabenzocyclononenones, 194
Boronic acids
Syntheses with organoboranes. XIII. Synthesis of $\omega$-(4-bromophenyl)alkanoic acids and their borylation, 129
Boron nitride
Boron nitride thin fibres obtained from a new copolymer borazinetri(methylamino)borazine precursor, 107
High resolution solid state NMR investigation of various boron nitride preceramic polymers, 75
B-phenylation
Polyhedral monocarbaborane chemistry: The C,B-para-diphenyl monocarbadodecaborane anion $\left[1,12-\mathrm{Ph}_{2} \text {-closo }-1-\mathrm{CB}_{11} \mathrm{H}_{10}\right]^{-}$, 176

## Bromination

$\operatorname{Pd}(\mathrm{II})$ bromide complexes of 1,2-bis(diphenylphosphino)-1,2-dicar-ba-closo-dodecaborane. Crystal structures of $\left[\mathrm{PdBr}_{2}(1,2-\right.$ $\left.\left.\left(\mathrm{PPh}_{2}\right)_{2}-1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CH}_{2} \mathrm{Cl}_{2}, \quad\left[\mathrm{PdBr}_{1.133} \mathrm{Cl}_{0.867}\left(1,2-\left(\mathrm{PPh}_{2}\right)_{2}-\right.\right.$ $\left.\left.1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CH}_{2} \mathrm{Cl}_{2}$ and $\left[\mathrm{PdBrCl}_{0.541} \mathrm{Me}_{0.459}\left(1,2-\left(\mathrm{PPh}_{2}\right)_{2}-\right.\right.$ $\left.\left.1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CHCl}_{3}, 187$
B-substitution
Polyhedral monocarbaborane chemistry: The C,B-para-diphenyl monocarbadodecaborane anion [1,12- $\mathrm{Ph}_{2}$-closo-1- $\left.\mathrm{CB}_{11} \mathrm{H}_{10}\right]^{-}$, 176

## Carboranes

Functionalized cobalt bis(dicarbollide) ions as selective extraction reagents for removal of $\mathrm{M}^{2+}$ and $\mathrm{M}^{3+}$ cations from nuclear waste, crystal and molecular structures of the $\left[8,8^{\prime}-\mu-\right.$ $\left.\operatorname{CIP}(\mathrm{O})(\mathrm{O})_{2}<\left(1,2-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right)_{2}-3,3^{\prime}-\mathrm{Co}\right] \mathrm{HN}\left(\mathrm{C}_{2} \mathrm{H}_{5}\right)_{3}$ and $\left[8,8^{\prime}-\mu-\right.$ $\left.\mathrm{Et}_{2} \mathrm{NP}(\mathrm{O})(\mathrm{O})_{2}<\left(1,2-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right)_{2}-3,3^{\prime}-\mathrm{Co}\right]\left(\mathrm{HN}\left(\mathrm{CH}_{3}\right)_{3}\right), 59$
Molecular construction based on icosahedral carboranes and aromatic $N, N^{\prime}$-dimethylurea groups. Aromatic layered molecules and a transition metal complex, 48
Recent developments in the chemistry of the nine-vertex monocarbaboranes, 3
Catalysis
Porous boron nitride supports obtained from molecular precursors. Influence of the precursor formulation and of the
thermal treatment on the properties of the BN ceramic, 98
C,B-diphenylation
Polyhedral monocarbaborane chemistry: The C,B-para-diphenyl monocarbadodecaborane anion [1,12- $\mathrm{Ph}_{2}$-closo-1- $\left.\mathrm{CB}_{11} \mathrm{H}_{10}\right]^{-}$, 176
Ceramization
Pyrolysis of poly[2,4,6-tri(methylamino)borazine] and its conversion into BN fibers, 91
Chirality
Functionalized cobalt bis(dicarbollide) ions as selective extraction reagents for removal of $\mathrm{M}^{2+}$ and $\mathrm{M}^{3+}$ cations from nuclear waste, crystal and molecular structures of the $\left[8,8^{\prime}-\mu-\right.$ $\left.\mathrm{CIP}(\mathrm{O})(\mathrm{O})_{2}<\left(1,2-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right)_{2}-3,3^{\prime}-\mathrm{Co}\right] \mathrm{HN}\left(\mathrm{C}_{2} \mathrm{H}_{5}\right)_{3}$ and $\left[8,8^{\prime}-\mu-\right.$ $\left.\mathrm{Et}_{2} \mathrm{NP}(\mathrm{O})(\mathrm{O})_{2}<\left(1,2-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right)_{2}-3,3^{\prime}-\mathrm{Co}\right]\left(\mathrm{HN}\left(\mathrm{CH}_{3}\right)_{3}\right), 59$
Chiral metal complexes
Functionalized cobalt bis(dicarbollide) ions as selective extraction reagents for removal of $\mathrm{M}^{2+}$ and $\mathrm{M}^{3+}$ cations from nuclear waste, crystal and molecular structures of the $\left[8,8^{\prime}-\mu-\right.$ $\left.\mathrm{CIP}(\mathrm{O})(\mathrm{O})_{2}<\left(1,2-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right)_{2}-3,3^{\prime}-\mathrm{Co}\right] \mathrm{HN}\left(\mathrm{C}_{2} \mathrm{H}_{5}\right)_{3}$ and $\left[8,8^{\prime}-\mu-\right.$ $\left.\mathrm{Et}_{2} \mathrm{NP}(\mathrm{O})(\mathrm{O})_{2}<\left(1,2-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right)_{2}-3,3^{\prime}-\mathrm{Co}\right]\left(\mathrm{HN}\left(\mathrm{CH}_{3}\right)_{3}\right), 59$

## Closed monocarbaborane

Polyhedral monocarbaborane chemistry: The C,B-para-diphenyl monocarbadodecaborane anion [1,12- $\mathrm{Ph}_{2}$-closo-1- $\left.\mathrm{CB}_{11} \mathrm{H}_{10}\right]^{-}$, 176
Close-packing
The use of Kitaigorodskii's Aufbau principle in the solid-state study of crystalline borane compounds. A preliminary account, 20
Closo-decaborate
Synthesis and derivatization of the 2-amino-closo-decaborate anion $\left[2-\mathrm{B}_{10} \mathrm{H}_{9} \mathrm{NH}_{3}\right]^{-}, 163$
Closo monocarbaborane series
Polyhedral monocarbaborane chemistry: The closo $-\left[\mathrm{PhCB}_{7} \mathrm{H}_{7}\right]^{-}$ and closo $-\left[\mathrm{PhCB}_{10} \mathrm{H}_{10}\right]^{-}$anions: the two missing species in the closo $-\left[\mathrm{PhCB}_{n} \mathrm{H}_{n}\right]^{-}$sequence, 180
Cluster chemistry
Macropolyhedral boron-containing cluster chemistry: A novel triple-cluster structural motif. Isolation and characterisation of contiguous twenty-vertex $\left[\left(\mathrm{PPh}_{3}\right)_{4} \mathrm{ClPd}_{4} \mathrm{~B}_{16} \mathrm{H}_{17}\left(\mathrm{PPh}_{3}\right)_{2}\right], 262$

## Cluster's isomerization

Recent studies on $R R^{\prime} S \cdot \mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}$ charge-compensated ligands: Crystal structures of $10-\left(\mathrm{S}\left(\mathrm{CH}_{3}\right)_{2}\right)-7,8-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}$ and 10 -$\left(\mathrm{S}_{\left.\left(\mathrm{CH}_{2}\right)_{4}\right)-7,8-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}, 247}\right.$
Cluster's thermolisis
Recent studies on $\mathrm{RR}^{\prime} \mathrm{S} \cdot \mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}$ charge-compensated ligands: Crystal structures of $10-\left(\mathrm{S}\left(\mathrm{CH}_{3}\right)_{2}\right)-7,8-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}$ and 10-$\left(\mathrm{S}\left(\mathrm{CH}_{2}\right)_{4}\right)-7,8-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}, 247$
CMPO
Synthesis of $\left[\mathrm{B}_{12} \mathrm{H}_{12}\right]^{2-}$ based extractants and their application for the treatment of nuclear wastes, 83
Conducting organic polymers
Cobaltabisdicarbollide anion $\left[\mathrm{Co}\left(\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}\right)_{2}\right]^{-}$as doping agent on intelligent membranes for ion capture, 239
Conformation
Molecular construction based on icosahedral carboranes and aromatic $N, N^{\prime}$-dimethylurea groups. Aromatic layered molecules and a transition metal complex, 48
Conjuncto heteroboranes
Macropolyhedral thiaboranes with unusual arachno subclusters - a computational investigation, 273
C-phenylated carbaboranes
Polyhedral monocarbaborane chemistry: The closo $-\left[\mathrm{PhCB}_{7} \mathrm{H}_{7}\right]^{-}$ and closo $-\left[\mathrm{PhCB}_{10} \mathrm{H}_{10}\right]^{-}$anions: the two missing species in the closo $-\left[\mathrm{PhCB}_{n} \mathrm{H}_{n}\right]^{-}$sequence, 180
Cross-coupling
Palladium-catalyzed cross-coupling reactions of arylboronic acids and 2-I- $p$-carborane, 267

Cross-coupling reaction
Syntheses with organoboranes. XIII. Synthesis of $\omega$-(4-bromophenyl)alkanoic acids and their borylation, 129
Cross-link
Pyrolysis of poly[2,4,6-tri(methylamino)borazine] and its conversion into BN fibers, 91
Crystal engineering
The use of Kitaigorodskii's Aufbau principle in the solid-state study of crystalline borane compounds. A preliminary account, 20
Crystallization
Pyrolysis of poly[2,4,6-tri(methylamino)borazine] and its conversion into BN fibers, 91
Crystal structures
$\operatorname{Pd}(\mathrm{II})$ bromide complexes of 1,2-bis(diphenylphosphino)-1,2-dicar-ba-closo-dodecaborane. Crystal structures of $\left[\mathrm{PdBr}_{2}(1,2-\right.$ $\left.\left.\left(\mathrm{PPh}_{2}\right)_{2}-1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CH}_{2} \mathrm{Cl}_{2}, \quad\left[\mathrm{PdBr}_{1.133} \mathrm{Cl}_{0.867}\left(1,2-\left(\mathrm{PPh}_{2}\right)_{2}-\right.\right.$ $\left.\left.1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CH}_{2} \mathrm{Cl}_{2}$ and $\left[\mathrm{PdBrCl}_{0.541} \mathrm{Me}_{0.459}\left(1,2-\left(\mathrm{PPh}_{2}\right)_{2^{-}}\right.\right.$ $\left.\left.1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CHCl}_{3}, 187$
C-substituted carbaboranes
Polyhedral monocarbaborane chemistry: The closo $-\left[\mathrm{PhCB}_{7} \mathrm{H}_{7}\right]^{-}$ and closo $-\left[\mathrm{PhCB}_{10} \mathrm{H}_{10}\right]^{-}$anions: the two missing species in the closo $-\left[\mathrm{PhCB}_{n} \mathrm{H}_{n}\right]^{-}$sequence, 180
[3+2] Cycloadditions
Chiral boronates - versatile reagents in asymmetric synthesis, 136
Cyclopentanes
Chiral boronates-versatile reagents in asymmetric synthesis, 136
Deboronation
Retention of the $\mathrm{B}(3)-\mathrm{X}(\mathrm{X}=\mathrm{Br}, \mathrm{I})$ bond in closo-o-carborane derivatives after nucleophilic attack. The first synthesis of [3-X-7-R-7,8-nido $\left.-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right]^{-} \quad(\mathrm{X}=\mathrm{Br}, \mathrm{I})$. Crystal structure of [ $\mathrm{HNMe}_{3}$ ][3-I-7,8-nido $-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}$ ], 217
Decahydro-closo-decaborate $(2-)$ anion
Dihydrogen bonding of decahydro-closo-decaborate $(2-)$ and dodecahydro-closo-dodecaborate $(2-)$ anions with proton donors: experimental and theoretical investigation, 155
Density functional theory computations
Macropolyhedral thiaboranes with unusual arachno subclusters-a computational investigation, 273
Derivatization
Synthesis and derivatization of the 2-amino-closo-decaborate anion $\left[2-\mathrm{B}_{10} \mathrm{H}_{9} \mathrm{NH}_{3}\right]^{-}, 163$
Dihydrogen-bonding
The use of Kitaigorodskii's Aufbau principle in the solid-state study of crystalline borane compounds. A preliminary account, 20
Dimethylamino
Synthesis and structure of 2,4,6-tris[tris(dimethylamino)silylamino]borazine: $\left\{\left[\left(\mathrm{CH}_{3}\right)_{2} \mathrm{~N}\right]_{3} \mathrm{SiNH}\right\}_{3} \mathrm{~B}_{3} \mathrm{~N}_{3} \mathrm{H}_{3}, 71$
Dodecahydro-closo-dodeca-borate (2-) anion
Dihydrogen bonding of decahydro-closo-decaborate(2-) and dodecahydro-closo-dodecaborate $(2-)$ anions with proton donors: experimental and theoretical investigation, 155

## Ferracarboranes

Polysubstituted derivatives of $3-\left(\eta^{5}-\mathrm{Cp}\right)-4-\mathrm{SMe}_{2}-3,1,2-\mathrm{FeC}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}$. X-ray structure of 3-( $\left.\eta^{5}-\mathrm{Cp}\right)-4-\mathrm{SMe}_{2}-7,8-\left(\mathrm{CF}_{3} \mathrm{COO}\right)_{2}-12-\mathrm{HgCl}-$ $3,1,2-\mathrm{FeC}_{2} \mathrm{~B}_{9} \mathrm{H}_{7}, 171$
Fibre
Boron nitride thin fibres obtained from a new copolymer borazinetri(methylamino)borazine precursor, 107
Fusion modes
Macropolyhedral boron-containing cluster chemistry: A novel triple-cluster structural motif. Isolation and characterisation of contiguous twenty-vertex $\left[\left(\mathrm{PPh}_{3}\right)_{4} \mathrm{ClPd}_{4} \mathrm{~B}_{16} \mathrm{H}_{17}\left(\mathrm{PPh}_{3}\right)_{2}\right], 262$

## Heterocycles

Reactivity of some poly-1-alkynylsilicon and -tin compounds
towards triallylborane-routes to novel heterocycles, 146
Hydrododecaborate
Synthesis of $\left[\mathrm{B}_{12} \mathrm{H}_{12}\right]^{2-}$ based extractants and their application for the treatment of nuclear wastes, 83
Hydrogen bond
Dihydrogen bonding of decahydro-closo-decaborate( $2-$ ) and dodecahydro-closo-dodecaborate $(2-)$ anions with proton donors: experimental and theoretical investigation, 155

## Hypho cluster

Azanonaborane-pyridine derivatives $\left[\left(\mathrm{R}^{\prime} \mathrm{C}_{5} \mathrm{H}_{4} \mathrm{~N}\right) \mathrm{B}_{8} \mathrm{H}_{11} \mathrm{NHR}^{\prime \prime}\right]$ : synthesis, structure and some molecular-orbital calculations, 205
Iodinated ligands
Retention of the $\mathrm{B}(3)-\mathrm{X}(\mathrm{X}=\mathrm{Br}$, I) bond in closo-o-carborane derivatives after nucleophilic attack. The first synthesis of [3-X-7-R-7,8-nido $\left.-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right]^{-} \quad(\mathrm{X}=\mathrm{Br}, \mathrm{I})$. Crystal structure of [ $\mathrm{HNMe}_{3}$ ][3-I-7,8-nido- $\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}$ ], 217

Ionic liquid
Syntheses with organoboranes. XIII. Synthesis of $\omega$-(4-bromophenyl)alkanoic acids and their borylation, 129
IR spectroscopy
Dihydrogen bonding of decahydro-closo-decaborate(2-) and dodecahydro-closo-dodecaborate( $2-$ ) anions with proton donors: experimental and theoretical investigation, 155
Isoquinolines
Allylboration of functionalized isoquinolines, 123
Kitaigorodskii's Aufbau principle
The use of Kitaigorodskii's Aufbau principle in the solid-state study of crystalline borane compounds. A preliminary account, 20

Lewis basicity of the phosphines
Phosphine-boranes incorporating the carborane cluster, 224
Liquid-liquid extraction
Functionalized cobalt bis(dicarbollide) ions as selective extraction reagents for removal of $\mathrm{M}^{2+}$ and $\mathrm{M}^{3+}$ cations from nuclear waste, crystal and molecular structures of the $\left[8,8^{\prime}-\mu-\right.$ $\left.\mathrm{CIP}(\mathrm{O})(\mathrm{O})_{2}<\left(1,2-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right)_{2}-3,3^{\prime}-\mathrm{Co}\right] \mathrm{HN}\left(\mathrm{C}_{2} \mathrm{H}_{5}\right)_{3}$ and $\left[8,8^{\prime}-\mu-\right.$ $\left.\mathrm{Et}_{2} \mathrm{NP}(\mathrm{O})(\mathrm{O})_{2}<\left(1,2-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right)_{2}-3,3^{\prime}-\mathrm{Co}\right]\left(\mathrm{HN}\left(\mathrm{CH}_{3}\right)_{3}\right), 59$
Synthesis of $\left[\mathrm{B}_{12} \mathrm{H}_{12}\right]^{2-}$ based extractants and their application for the treatment of nuclear wastes, 83

Macropolyhedra
Macropolyhedral thiaboranes with unusual arachno subclusters - a computational investigation, 273
Macropolyhedral
Macropolyhedral boron-containing cluster chemistry: A novel triple-cluster structural motif. Isolation and characterisation of contiguous twenty-vertex $\left[\left(\mathrm{PPh}_{3}\right)_{4} \mathrm{ClPd}_{4} \mathrm{~B}_{16} \mathrm{H}_{17}\left(\mathrm{PPh}_{3}\right)_{2}\right.$ ], 262
Macropolyhedral boron-containing cluster chemistry: Models for intermediates en route to globular and discoidal megaloborane assemblies. Structures of $\left[\right.$ nido $\left.-\mathrm{B}_{10} \mathrm{H}_{12}\left(\text { nido }-\mathrm{B}_{5} \mathrm{H}_{8}\right)_{2}\right]$ and $\left[\left(\mathrm{CH}_{2} \mathrm{CH}_{2} \mathrm{C}_{5} \mathrm{H}_{4} \mathrm{~N}\right)\right.$-arachno $-\mathrm{B}_{10} \mathrm{H}_{10}\left(\mathrm{NC}_{5} \mathrm{H}_{4}\right.$-closo $\left.-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)$ ] as determined by synchrotron X-ray diffraction analysis, 256
Megaloborane
Macropolyhedral boron-containing cluster chemistry: Models for intermediates en route to globular and discoidal megaloborane assemblies. Structures of $\left[\right.$ nido $\left.-\mathrm{B}_{10} \mathrm{H}_{12}\left(\text { nido }-\mathrm{B}_{5} \mathrm{H}_{8}\right)_{2}\right]$ and $\left[\left(\mathrm{CH}_{2} \mathrm{CH}_{2} \mathrm{C}_{5} \mathrm{H}_{4} \mathrm{~N}\right)\right.$-arachno- $\mathrm{B}_{10} \mathrm{H}_{10}\left(\mathrm{NC}_{5} \mathrm{H}_{4}\right.$-closo $\left.-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)$ ] as determined by synchrotron X-ray diffraction analysis, 256
Mercuration
Polysubstituted derivatives of $3-\left(\eta^{5}-\mathrm{Cp}\right)-4-\mathrm{SMe}_{2}-3,1,2-\mathrm{FeC}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}$. X-ray structure of 3-( $\left.\eta^{5}-\mathrm{Cp}\right)-4-\mathrm{SMe}_{2}-7,8-\left(\mathrm{CF}_{3} \mathrm{COO}\right)_{2}-12-\mathrm{HgCl}-$ $3,1,2-\mathrm{FeC}_{2} \mathrm{~B}_{9} \mathrm{H}_{7}, 171$
Metallaborane
Macropolyhedral boron-containing cluster chemistry: A novel
triple-cluster structural motif. Isolation and characterisation of contiguous twenty-vertex $\left[\left(\mathrm{PPh}_{3}\right)_{4} \mathrm{ClPd}_{4} \mathrm{~B}_{16} \mathrm{H}_{17}\left(\mathrm{PPh}_{3}\right)_{2}\right]$, 262
Metallaboranes
Chemistry on a metallathiaborane cluster Part 4: reactions of 11vertex rhodathiaboranes with bidentate phosphines and their subsequent rearrangements, 40
Functionalized cobalt bis(dicarbollide) ions as selective extraction reagents for removal of $\mathrm{M}^{2+}$ and $\mathrm{M}^{3+}$ cations from nuclear waste, crystal and molecular structures of the $\left[8,8^{\prime}-\mu-\right.$ $\left.\operatorname{CIP}(\mathrm{O})(\mathrm{O})_{2}<\left(1,2-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right)_{2}-3,3^{\prime}-\mathrm{Co}\right] \mathrm{HN}\left(\mathrm{C}_{2} \mathrm{H}_{5}\right)_{3}$ and $\left[8,8^{\prime}-\mu-\right.$ $\left.\mathrm{Et}_{2} \mathrm{NP}(\mathrm{O})(\mathrm{O})_{2}<\left(1,2-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right)_{2}-3,3^{\prime}-\mathrm{Co}\right]\left(\mathrm{HN}\left(\mathrm{CH}_{3}\right)_{3}\right), 59$
Metallacarboranes
Imide- and amide-supported Group 5 and 6 metallacarboranes, 9
Synthesis and structure of rhodium complexes with monoanionic carborane ligand $\left[9-\mathrm{SMe}_{2}-7,8-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right]^{-}, 115$
MO calculations
Azanonaborane-pyridine derivatives $\left[\left(\mathrm{R}^{\prime} \mathrm{C}_{5} \mathrm{H}_{4} \mathrm{~N}\right) \mathrm{B}_{8} \mathrm{H}_{11} \mathrm{NHR}^{\prime \prime}\right]$ : synthesis, structure and some molecular-orbital calculations, 205
Molecular design
Molecular construction based on icosahedral carboranes and aromatic $N, N^{\prime}$-dimethylurea groups. Aromatic layered molecules and a transition metal complex, 48
Monocarbaboranes
Recent developments in the chemistry of the nine-vertex monocarbaboranes, 3
Multinuclear
Reactivity of some poly-1-alkynylsilicon and -tin compounds towards triallylborane-routes to novel heterocycles, 146
nido Carborane derivatives
Retention of the $\mathrm{B}(3)-\mathrm{X}(\mathrm{X}=\mathrm{Br}, \mathrm{I})$ bond in closo-o-carborane derivatives after nucleophilic attack. The first synthesis of [3-X-7-R-7,8-nido $\left.-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right]^{-} \quad(\mathrm{X}=\mathrm{Br}$, I$)$. Crystal structure of [ $\mathrm{HNMe}_{3}$ ][3-I-7,8-nido - $\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}$ ], 217
Nido-carboranylmonosulfonium
Recent studies on $R R^{\prime} S \cdot \mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}$ charge-compensated ligands: Crystal structures of $10-\left(\mathrm{S}\left(\mathrm{CH}_{3}\right)_{2}\right)-7,8-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}$ and 10$\left(\mathrm{S}_{\left.\left(\mathrm{CH}_{2}\right)_{4}\right)}\right) 7,8-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}, 247$
Nido-carboranylphosphines
Phosphine-boranes incorporating the carborane cluster, 224

## Niobium

Imide- and amide-supported Group 5 and 6 metallacarboranes, 9 Nitride

Porous boron nitride supports obtained from molecular precursors. Influence of the precursor formulation and of the thermal treatment on the properties of the BN ceramic, 98
N ligands
Azanonaborane-pyridine derivatives $\left[\left(\mathrm{R}^{\prime} \mathrm{C}_{5} \mathrm{H}_{4} \mathrm{~N}\right) \mathrm{B}_{8} \mathrm{H}_{11} \mathrm{NHR}^{\prime \prime}\right]$ : synthesis, structure and some molecular-orbital calculations, 205
NMR
Reactivity of some poly-1-alkynylsilicon and -tin compounds towards triallylborane - routes to novel heterocycles, 146
X-ray analysis and structural characterization of 2-phenyl-6-aza-1,3-dioxa-2-borabenzocyclononenones, 194
NMR spectroscopy
Chemistry on a metallathiaborane cluster Part 4: reactions of 11vertex rhodathiaboranes with bidentate phosphines and their subsequent rearrangements, 40
Dihydrogen bonding of decahydro-closo-decaborate(2-) and dodecahydro-closo-dodecaborate $(2-)$ anions with proton donors: experimental and theoretical investigation, 155
Nuclear waste
Synthesis of $\left[\mathrm{B}_{12} \mathrm{H}_{12}\right]^{2-}$ based extractants and their application for the treatment of nuclear wastes, 83
$o$-Carboranes
Pd (II) bromide complexes of 1,2-bis(diphenylphosphino)-1,2-dicar-ba-closo-dodecaborane. Crystal structures of $\left[\mathrm{PdBr}_{2}(1,2-\right.$ $\left.\left.\left(\mathrm{PPh}_{2}\right)_{2}-1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CH}_{2} \mathrm{Cl}_{2}, \quad\left[\mathrm{PdBr}_{1.133} \mathrm{Cl}_{0.867}\left(1,2-\left(\mathrm{PPh}_{2}\right)_{2^{-}}\right.\right.$ $\left.\left.1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CH}_{2} \mathrm{Cl}_{2}$ and $\left[\mathrm{PdBrCl}_{0.541} \mathrm{Me}_{0.459}\left(1,2-\left(\mathrm{PPh}_{2}\right)_{2^{-}}\right.\right.$ $\left.\left.1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CHCl}_{3}, 187$
Organoboranes
Syntheses with organoboranes. XIII. Synthesis of $\omega$-(4-bromophenyl)alkanoic acids and their borylation, 129
Organoboration
Reactivity of some poly-1-alkynylsilicon and -tin compounds towards triallylborane-routes to novel heterocycles, 146
Oxonium
Synthesis of $\left[\mathrm{B}_{12} \mathrm{H}_{12}\right]^{2-}$ based extractants and their application for the treatment of nuclear wastes, 83

## Palladium

Palladium-catalyzed cross-coupling reactions of arylboronic acids and 2-I- $p$-carborane, 267
Palladium-boron cluster
Macropolyhedral boron-containing cluster chemistry: A novel triple-cluster structural motif. Isolation and characterisation of contiguous twenty-vertex $\quad\left[\left(\mathrm{PPh}_{3}\right)_{4} \mathrm{ClPd}_{4} \mathrm{~B}_{16} \mathrm{H}_{17}\left(\mathrm{PPh}_{3}\right)_{2}\right]$, 262

## Palladium(II)

$\mathrm{Pd}($ II ) bromide complexes of 1,2-bis(diphenylphosphino)-1,2-dicar-ba-closo-dodecaborane. Crystal structures of $\left[\mathrm{PdBr}_{2}(1,2-\right.$ $\left.\left.\left(\mathrm{PPh}_{2}\right)_{2}-1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CH}_{2} \mathrm{Cl}_{2},\left[\mathrm{PdBr}_{1.133} \mathrm{Cl}_{0.867}\left(1,2-\left(\mathrm{PPh}_{2}\right)_{2^{-}}\right.\right.$ $\left.\left.1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CH}_{2} \mathrm{Cl}_{2}$ and $\left[\mathrm{PdBrCl}_{0.541} \mathrm{Me}_{0.459}\left(1,2-\left(\mathrm{PPh}_{2}\right)_{2^{-}}\right.\right.$ $\left.\left.1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CHCl}_{3}, 187$
$p$-Carborane
Palladium-catalyzed cross-coupling reactions of arylboronic acids and 2-I- $p$-carborane, 267
Phosphaboranes
Recent developments in the chemistry of the nine-vertex monocarbaboranes, 3
Phosphacarboranes
Recent developments in the chemistry of the nine-vertex monocarbaboranes, 3
Phosphorus
Functionalized cobalt bis(dicarbollide) ions as selective extraction reagents for removal of $\mathrm{M}^{2+}$ and $\mathrm{M}^{3+}$ cations from nuclear waste, crystal and molecular structures of the $\left[8,8^{\prime}-\mu\right.$ -$\left.\operatorname{CIP}(\mathrm{O})(\mathrm{O})_{2}<\left(1,2-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right)_{2}-3,3^{\prime}-\mathrm{Co}\right] \mathrm{HN}\left(\mathrm{C}_{2} \mathrm{H}_{5}\right)_{3}$ and $\left[8,8^{\prime}-\mu-\right.$ $\left.\mathrm{Et}_{2} \mathrm{NP}(\mathrm{O})(\mathrm{O})_{2}<\left(1,2-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right)_{2}-3,3^{\prime}-\mathrm{Co}\right]\left(\mathrm{HN}\left(\mathrm{CH}_{3}\right)_{3}\right), 59$
Poly(aminoborane)
High resolution solid state NMR investigation of various boron nitride preceramic polymers, 75
Polyborazilene
High resolution solid state NMR investigation of various boron nitride preceramic polymers, 75

## PolyMAB

Pyrolysis of poly[2,4,6-tri(methylamino)borazine] and its conversion into BN fibers, 91
Polymer-mineral transition
Pyrolysis of poly[2,4,6-tri(methylamino)borazine] and its conversion into BN fibers, 91
Polypyrrole
Cobaltabisdicarbollide anion $\left[\mathrm{Co}\left(\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}\right)_{2}\right]^{-}$as doping agent on intelligent membranes for ion capture, 239
Powders
Porous boron nitride supports obtained from molecular precursors. Influence of the precursor formulation and of the thermal treatment on the properties of the BN ceramic, 98
Precursor
Boron nitride thin fibres obtained from a new copolymer borazinetri(methylamino)borazine precursor, 107

## Quantum chemistry calculation

Dihydrogen bonding of decahydro-closo-decaborate (2-) and dodecahydro-closo-dodecaborate $(2-)$ anions with proton donors: experimental and theoretical investigation, 155

## Rhodium

Chemistry on a metallathiaborane cluster Part 4: reactions of 11vertex rhodathiaboranes with bidentate phosphines and their subsequent rearrangements, 40
Synthesis and structure of rhodium complexes with monoanionic carborane ligand $\left[9-\mathrm{SMe}_{2}-7,8-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right]^{-}, 115$

## Schiff bases

Synthesis and derivatization of the 2-amino-closo-decaborate anion $\left[2-\mathrm{B}_{10} \mathrm{H}_{9} \mathrm{NH}_{3}\right]^{-}, 163$
Selectivity
Cobaltabisdicarbollide anion $\left[\mathrm{Co}\left(\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}\right)_{2}\right]^{-}$as doping agent on intelligent membranes for ion capture, 239

## Siloles

Reactivity of some poly-1-alkynylsilicon and -tin compounds towards triallylborane - routes to novel heterocycles, 146
Silylamino
Synthesis and structure of 2,4,6-tris[tris(dimethylamino)silylamino]borazine: $\left\{\left[\left(\mathrm{CH}_{3}\right)_{2} \mathrm{~N}\right]_{3} \mathrm{SiNH}\right\}_{3} \mathrm{~B}_{3} \mathrm{~N}_{3} \mathrm{H}_{3}, 71$
Solid solution
$\mathrm{Pd}(\mathrm{II})$ bromide complexes of 1,2-bis(diphenylphosphino)-1,2-dicar-ba-closo-dodecaborane. Crystal structures of $\left[\mathrm{PdBr}_{2}(1,2-\right.$ $\left.\left.\left(\mathrm{PPh}_{2}\right)_{2}-1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CH}_{2} \mathrm{Cl}_{2}, \quad\left[\mathrm{PdBr}_{1.133} \mathrm{Cl}_{0.867}\left(1,2-\left(\mathrm{PPh}_{2}\right)_{2^{-}}\right.\right.$ $\left.\left.1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CH}_{2} \mathrm{Cl}_{2}$ and $\left[\mathrm{PdBrCl}_{0.541} \mathrm{Me}_{0.459}\left(1,2-\left(\mathrm{PPh}_{2}\right)_{2}-\right.\right.$ $\left.\left.1,2-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right] \cdot \mathrm{CHCl}_{3}, 187$
Solid state NMR
High resolution solid state NMR investigation of various boron nitride preceramic polymers, 75
Stereoselectivity
Allylboration of functionalized isoquinolines, 123
Structural systematics
The use of Kitaigorodskii's Aufbau principle in the solid-state study of crystalline borane compounds. A preliminary account, 20
Structure
Synthesis and structure of 2,4,6-tris[tris(dimethylamino)silylamino]borazine: $\left\{\left[\left(\mathrm{CH}_{3}\right)_{2} \mathrm{~N}\right]_{3} \mathrm{SiNH}_{3} \mathrm{~B}_{3} \mathrm{~N}_{3} \mathrm{H}_{3}, 71\right.$
Support
Porous boron nitride supports obtained from molecular precursors. Influence of the precursor formulation and of the thermal treatment on the properties of the BN ceramic, 98
Supramolecular
The use of Kitaigorodskii's Aufbau principle in the solid-state study of crystalline borane compounds. A preliminary account, 20
Suzuki-Miayara reactions
Palladium-catalyzed cross-coupling reactions of arylboronic acids and 2-I- $p$-carborane, 267
Synchrotron X-ray diffraction analysis
Macropolyhedral boron-containing cluster chemistry: Models for intermediates en route to globular and discoidal megaloborane assemblies. Structures of $\left[\right.$ nido $\left.-\mathrm{B}_{10} \mathrm{H}_{12}\left(\text { nido }-\mathrm{B}_{5} \mathrm{H}_{8}\right)_{2}\right]$ and [( $\left.\mathrm{CH}_{2} \mathrm{CH}_{2} \mathrm{C}_{5} \mathrm{H}_{4} \mathrm{~N}\right)$-arachno $-\mathrm{B}_{10} \mathrm{H}_{10}\left(\mathrm{NC}_{5} \mathrm{H}_{4}\right.$-closo $\left.-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)$ ] as determined by synchrotron X-ray diffraction analysis, 256
Synthesis
Synthesis and structure of 2,4,6-tris[tris(dimethylamino)silylamino]borazine: $\left\{\left[\left(\mathrm{CH}_{3}\right)_{2} \mathrm{~N}\right]_{3} \mathrm{SiNH}\right\}_{3} \mathrm{~B}_{3} \mathrm{~N}_{3} \mathrm{H}_{3}, 71$

## Tantalum

Imide- and amide-supported Group 5 and 6 metallacarboranes, 9
Tertiary phosphonium salts
Phosphine-boranes incorporating the carborane cluster, 224
Thermolysis
Macropolyhedral boron-containing cluster chemistry: A novel
triple-cluster structural motif. Isolation and characterisation of contiguous twenty-vertex $\left[\left(\mathrm{PPh}_{3}\right)_{4} \mathrm{ClPd}_{4} \mathrm{~B}_{16} \mathrm{H}_{17}\left(\mathrm{PPh}_{3}\right)_{2}\right], 262$

## Thiaboranes

Chemistry on a metallathiaborane cluster Part 4: reactions of 11vertex rhodathiaboranes with bidentate phosphines and their subsequent rearrangements, 40
Macropolyhedral thiaboranes with unusual arachno subclusters - a computational investigation, 273
Triple cluster fusion
Macropolyhedral boron-containing cluster chemistry: Models for intermediates en route to globular and discoidal megaloborane assemblies. Structures of $\left[\right.$ nido $\left.-\mathrm{B}_{10} \mathrm{H}_{12}\left(\text { nido }-\mathrm{B}_{5} \mathrm{H}_{8}\right)_{2}\right]$ and $\left[\left(\mathrm{CH}_{2} \mathrm{CH}_{2} \mathrm{C}_{5} \mathrm{H}_{4} \mathrm{~N}\right)\right.$-arachno- $\mathrm{B}_{10} \mathrm{H}_{10}\left(\mathrm{NC}_{5} \mathrm{H}_{4}\right.$-closo $\left.\left.-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)\right]$ as determined by synchrotron X-ray diffraction analysis, 256

## Ureas

Molecular construction based on icosahedral carboranes and aromatic $N, N^{\prime}$-dimethylurea groups. Aromatic layered molecules and a transition metal complex, 48

Weak intermolecular interactions
The use of Kitaigorodskii's $A u f b a u$ principle in the solid-state study of crystalline borane compounds. A preliminary account, 20
Weakly coordinating anions
Cobaltabisdicarbollide anion $\left[\mathrm{Co}\left(\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}\right)_{2}\right]^{-}$as doping agent on intelligent membranes for ion capture, 239

X-ray crystallography
Functionalized cobalt bis(dicarbollide) ions as selective extraction reagents for removal of $\mathrm{M}^{2+}$ and $\mathrm{M}^{3+}$ cations from nuclear waste, crystal and molecular structures of the $\left[8,8^{\prime}-\mu-\right.$ $\left.\operatorname{CIP}(\mathrm{O})(\mathrm{O})_{2}<\left(1,2-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right)_{2}-3,3^{\prime}-\mathrm{Co}\right] \mathrm{HN}\left(\mathrm{C}_{2} \mathrm{H}_{5}\right)_{3}$ and $\left[8,8^{\prime}-\mu-\right.$ $\left.\mathrm{Et}_{2} \mathrm{NP}(\mathrm{O})(\mathrm{O})_{2}<\left(1,2-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right)_{2}-3,3^{\prime}-\mathrm{Co}\right]\left(\mathrm{HN}\left(\mathrm{CH}_{3}\right)_{3}\right), 59$

X-ray crystal structure
Azanonaborane-pyridine derivatives $\left[\left(\mathrm{R}^{\prime} \mathrm{C}_{5} \mathrm{H}_{4} \mathrm{~N}\right) \mathrm{B}_{8} \mathrm{H}_{11} \mathrm{NHR}^{\prime \prime}\right]$ : synthesis, structure and some molecular-orbital calculations, 205
X-ray diffraction
Chemistry on a metallathiaborane cluster Part 4: reactions of 11vertex rhodathiaboranes with bidentate phosphines and their subsequent rearrangements, 40
Polysubstituted derivatives of $3-\left(\eta^{5}-\mathrm{Cp}\right)-4-\mathrm{SMe}_{2}-3,1,2-\mathrm{FeC}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}$. X-ray structure of $3-\left(\eta^{5}-\mathrm{Cp}\right)-4-\mathrm{SMe}_{2}-7,8-\left(\mathrm{CF}_{3} \mathrm{COO}\right)_{2}-12-\mathrm{HgCl}-$ $3,1,2-\mathrm{FeC}_{2} \mathrm{~B}_{9} \mathrm{H}_{7}, 171$
X-ray structure
Synthesis and structure of rhodium complexes with monoanionic carborane ligand $\left[9-\mathrm{SMe}_{2}-7,8-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{10}\right]^{-}, 115$
X-ray structures
Macropolyhedral boron-containing cluster chemistry: Models for intermediates en route to globular and discoidal megaloborane assemblies. Structures of $\left[\right.$ nido $\left.-\mathrm{B}_{10} \mathrm{H}_{12}\left(\text { nido }-\mathrm{B}_{5} \mathrm{H}_{8}\right)_{2}\right]$ and [ $\left(\mathrm{CH}_{2} \mathrm{CH}_{2} \mathrm{C}_{5} \mathrm{H}_{4} \mathrm{~N}\right)$-arachno $-\mathrm{B}_{10} \mathrm{H}_{10}\left(\mathrm{NC}_{5} \mathrm{H}_{4}\right.$-closo $\left.-\mathrm{C}_{2} \mathrm{~B}_{10} \mathrm{H}_{10}\right)$ ] as determined by synchrotron X-ray diffraction analysis, 256
Polyhedral monocarbaborane chemistry: The C,B-para-diphenyl monocarbadodecaborane anion $\left[1,12-\mathrm{Ph}_{2} \text {-closo }-1-\mathrm{CB}_{11} \mathrm{H}_{10}\right]^{-}$, 176
Polyhedral monocarbaborane chemistry: The closo $-\left[\mathrm{PhCB}_{7} \mathrm{H}_{7}\right]^{-}$ and closo $-\left[\mathrm{PhCB}_{10} \mathrm{H}_{10}\right]^{-}$anions: the two missing species in the closo $-\left[\mathrm{PhCB}_{n} \mathrm{H}_{n}\right]^{-}$sequence, 180
X-ray analysis and structural characterization of 2-phenyl-6-aza-1,3-dioxa-2-borabenzocyclononenones, 194

Zwitterionic clusters
Recent studies on $\mathrm{RR}^{\prime} \mathrm{S} \cdot \mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}$ charge-compensated ligands: Crystal structures of $10-\left(\mathrm{S}\left(\mathrm{CH}_{3}\right)_{2}\right)-7,8-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}$ and 10-$\left(\mathrm{S}_{\left.\left(\mathrm{CH}_{2}\right)_{4}\right)-7,8-\mathrm{C}_{2} \mathrm{~B}_{9} \mathrm{H}_{11}, 247}\right.$

