

## Subject index of Volume 566

**Ab initio calculations**

Study of the planarization of the tricoordinate phosphorus in phospholes; photoelectron spectra and structure of partially planarized phospholes, 29

**Alkoxy carbonyl**

New palladium (substituted 1,10-phenanthroline) bis(methoxycarbonyl) complexes  $[\text{Pd}(\text{L-L})(\text{CO}_2\text{CH}_3)_2]$ : preparation and structural features, 37

**Alkylation**

Regioselectivity of alkylation of the naphthalene fragment in the opening of a small ring in 3-ferrocenyl-3-(1-naphthyl)cyclopropene, Z-2-bromo-1-ferrocenyl-1-(1-naphthyl)cyclopropane, and 1-ferrocenyl-1-(1-naphthyl)cyclopropane, 175

**Allyl ligand**

Zur Elektronenstruktur metallorganischer Komplexe der f-Elemente XLVII. Gelingt die Aufklärung der Elektronenstrukturen von  $\eta^3$ -Allylverbindungen der Lanthaniden anhand der Kristallfeld-Parameter von Heteroallylkomplexen?, 125

**Amination of olefins**

New cationic rhodium–amine complexes and their implication in the catalytic anti-Markovnikov oxidative amination of styrenes, 277

**Amines**

New cationic rhodium–amine complexes and their implication in the catalytic anti-Markovnikov oxidative amination of styrenes, 277

**ansa-Metallocene**

Synthesis and characterization of *rac*-[ethylene-1,2-bis( $\eta^5$ -4,5,6,7-tetrahydro-1-indenyl)]zirconium bisamides (EBTHI)Zr-(NHR)<sub>2</sub>, 287

**Anthracene**

Polymerization of ethylene catalyzed by half-metallocene complexes of niobium, tantalum, and zirconium bearing *o*-xylene or anthracene as an auxiliary ligand: molecular structure of  $[\text{Mg}_2\text{Cl}_3(\text{THF})_6][\text{ZrCl}_2(\eta^5\text{-C}_5\text{Me}_5)(\eta\text{-1-4-anthracene})]$ , 111

**Anti-Markovnikov reaction**

New cationic rhodium–amine complexes and their implication in the catalytic anti-Markovnikov oxidative amination of styrenes, 277

**Antitumor activity**

Synthesis, structures and in vitro antitumor activity of some germanium-substituted di-*n*-butyltin dipropionates, 103

**Arene**

Ruthenium(II) complexes containing both arene and functionalized phosphines. Synthesis and catalytic activity for the hydrogenation of styrene and phenylacetylene, 165

**Aromaticity**

Study of the planarization of the tricoordinate phosphorus in phospholes; photoelectron spectra and structure of partially planarized phospholes, 29

**Benzamidinato ligand**

Zur Elektronenstruktur metallorganischer Komplexe der f-Elemente XLVII. Gelingt die Aufklärung der Elektronenstrukturen von  $\eta^3$ -Allylverbindungen der Lanthaniden anhand der Kristallfeld-Parameter von Heteroallylkomplexen?, 125

**Bimetallic complexes**

Synthesis, characterization and decomposition patterns for thiophene bridged dinuclear biscarbene complexes of manganese and chromium in refluxing carbon disulphide and acetone, 133

**Bipyridine**

Synthesis and redox properties of the cycloheptatrienylmolybdenum complexes  $[\text{MoX}(\text{N-N})(\eta\text{-C}_7\text{H}_7)]^{z+}$ , ( $\text{N-N} = 2,2'$ -bipyridine or 1,4-Bu<sub>2</sub>'-1,3-diazabutadiene;  $z = 0$ , X = Br or Me;  $z = 1$ , X = NCMe, CNBu' or CO), 151

**Bipyridyl**

(1-Phenyl-3-methyl-4-acetylpyrazolon-5-ato)rhodium(I) complexes, synthesis, structural and spectroscopical characterization: Reactivity of diolefin- and dicarbonyl-rhodium complexes toward N-, P- and O-donors, 187

**Biradicals**

Paramagnetic intermediates in the photolysis of 7-silanorbornadiene studied by means of spin chemistry method, 73

**Biscarbene complexes**

Synthesis, characterization and decomposition patterns for thiophene bridged dinuclear biscarbene complexes of manganese and chromium in refluxing carbon disulphide and acetone, 133

**bis(Tetrahydroindenyl)**

Synthesis and characterization of *rac*-[ethylene-1,2-bis( $\eta^5$ -4,5,6,7-tetrahydro-1-indenyl)]zirconium bisamides (EBTHI)Zr-(NHR)<sub>2</sub>, 287

**Carbene**

Isolation and characterization of  $[\text{Fe}_2(\text{CO})_6\text{Se}_2\{\mu\text{-}(\text{CO})_3\text{Cr}(\eta^5\text{-C}_5\text{H})(\text{CH}_2\text{Ph})(\text{Ph})(\text{OEt})\}]$ ,  $[(\text{CO})_6\text{Fe}_2\{\mu\text{-EC}(\text{Ph})=\text{C}(\text{E}')\text{C}(\text{H})(\text{OEt})\}]_2$  and  $[(\text{CO})_6\text{Fe}_2\{\mu\text{-SC}(\text{H})(\text{Ph})\text{C}(\text{Te})=\text{C}(\text{H})(\text{OEt})\}]$  from the thermolysis of Fischer carbene adducts  $[(\text{CO})_6\text{Fe}_2\text{EE}'\{\mu\text{-C}(\text{Ph})=\text{C}-\text{C}(\text{OEt})=\text{Cr}(\text{CO})_5\}]$  (E, E' = Se and E = S, E' = Te), 159

Synthesis, characterization and decomposition patterns for thiophene bridged dinuclear biscarbene complexes of manganese and chromium in refluxing carbon disulphide and acetone, 133

**Carbenoids**

Regioselectivity of alkylation of the naphthalene fragment in the opening of a small ring in 3-ferrocenyl-3-(1-naphthyl)cyclopropene, Z-2-bromo-1-ferrocenyl-1-(1-naphthyl)cyclopropane, and 1-ferrocenyl-1-(1-naphthyl)cyclopropane, 175

## Carbocations

Regioselectivity of alkylation of the naphthalene fragment in the opening of a small ring in 3-ferrocenyl-3-(1-naphthyl)cyclopropene, Z-2-bromo-1-ferrocenyl-1-(1-naphthyl)cyclopropane, and 1-ferrocenyl-1-(1-naphthyl)cyclopropane, 175

## Carbonylation

New palladium (substituted 1,10-phenanthroline) bis(methoxycarbonyl) complexes  $[Pd(L-L)(CO_2CH_3)_2]$ : preparation and structural features, 37

## Carbonylferrates

New chiral zwitterionic iron hydride complexes with 'ephosium' and 'valphosium' ligands, 117

## Carbonyls

Synthesis and X-ray structure of a novel 12-nuclear cluster  $Pd_{12}(CO)_{12}(PBu''_3)_6$ , 15

## Catalysis

New cationic rhodium–amine complexes and their implication in the catalytic anti-Markovnikov oxidative amination of styrenes, 277

## Chiral lanthanocene

Chiral lanthanocene complexes with an ether-functionalized indene ligand: synthesis and structure of bis{1-(2-methoxyethyl)-indenyl}lanthanocene chlorides, 21

## Chiral phosphinite-ammoniums

New chiral zwitterionic iron hydride complexes with 'ephosium' and 'valphosium' ligands, 117

## CIDNP

Paramagnetic intermediates in the photolysis of 7-silanorbornadiene studied by means of spin chemistry method, 73

## Cluster

Isolation and characterization of  $[Fe_2(CO)_6Se_2\{\mu-(CO)_3Cr(\eta^5-C_5(H)(CH_2Ph)(Ph)(OEt)\}]$ ,  $[(CO)_6Fe_2\{\mu-EC(Ph)=C(E')C(H)(OEt)\}_2$  and  $[(CO)_6Fe_2\{\mu-SC(H)(Ph)C(Te)=C(H)(OEt)\}]$  from the thermolysis of Fischer carbene adducts  $[(CO)_6Fe_2EE'\{\mu-C(Ph)=C-C(OEt)=Cr(CO)_5\}]$  ( $E, E' = Se$  and  $E = S, E' = Te$ ), 159

## Clusters

Reactions of  $[Os_3(\mu-H)_2(CO)_{10}]$  with  $[Rh(COD)(L)I]$  ( $COD = cycloocta-1,5-diene$ ;  $L = 2,2'-bipyridine, 1,10-phenanthroline and 4,4'-diphenyl-2,2'-dipyridyl$ ): crystal and molecular structures of  $[Os_3Rh(\mu-H)_3(CO)_{10}(\eta^4-COD)]$ ,  $[Os_3Rh(\mu-H)_2(CO)_8(\mu-CO)(\mu-I)(\eta^4-COD)]$  and  $[Os_3Rh(\mu-H)_2(CO)_8(\mu-CO)(\mu-I)(bipy)]$ , 237

Synthesis and X-ray structure of a novel 12-nuclear cluster  $Pd_{12}(CO)_{12}(PBu''_3)_6$ , 15

## Crystal field parameters

Zur Elektronenstruktur metallorganischer Komplexe der f-Elemente XLVII. Gelingt die Aufklärung der Elektronenstrukturen von  $\eta^3$ -Allylverbindungen der Lanthaniden anhand der Kristallfeld-Parameter von Heteroallylkomplexen?, 125

## Crystal structure

Chiral lanthanocene complexes with an ether-functionalized indene ligand: synthesis and structure of bis{1-(2-methoxyethyl)-indenyl}lanthanocene chlorides, 21

Synthesis and characterization of *rac*-[ethylene-1,2-bis( $\eta^5$ -4,5,6,7-tetrahydro-1-indenyl)]zirconium bisamides (EBTHI)Zr(NHR)<sub>2</sub>, 287

Synthesis, structures and in vitro antitumor activity of some germanium-substituted di-*n*-butyltin dipropionates, 103

## Cycloaddition

Cycloadditionsreaktionen von Molybdän- und Wolfram-Phosphoniumkomplexen mit Diazoethylacetat: Synthese und strukturelle Charakterisierung von drei- und fünf-gliedrigen Phosphametallacyclen: Phosphenium-Komplexe, 39, 271

## [4 + 2]-Cycloadducts

Regioselectivity of alkylation of the naphthalene fragment in the opening of a small ring in 3-ferrocenyl-3-(1-naphthyl)cyclopropene, Z-2-bromo-1-ferrocenyl-1-(1-naphthyl)cyclopropane, and 1-ferrocenyl-1-(1-naphthyl)cyclopropane, 175

## Cycloheptatrienyl

Synthesis and redox properties of the cycloheptatrienylmolybdenum complexes  $[MoX(N-N)(\eta-C_7H_7)]^{z+}$ , ( $N-N = 2,2'$ -bipyridine or 1,4-Bu<sub>2</sub>'-1,3-diazabutadiene;  $z = 0$ ,  $X = Br$  or Me;  $z = 1$ ,  $X = NCMe, CNBu'$  or CO), 151

## Cyclopropane

Regioselectivity of alkylation of the naphthalene fragment in the opening of a small ring in 3-ferrocenyl-3-(1-naphthyl)cyclopropene, Z-2-bromo-1-ferrocenyl-1-(1-naphthyl)cyclopropane, and 1-ferrocenyl-1-(1-naphthyl)cyclopropane, 175

## Cyclopropene

Regioselectivity of alkylation of the naphthalene fragment in the opening of a small ring in 3-ferrocenyl-3-(1-naphthyl)cyclopropene, Z-2-bromo-1-ferrocenyl-1-(1-naphthyl)cyclopropane, and 1-ferrocenyl-1-(1-naphthyl)cyclopropane, 175

## Density functional theory

Matrix isolation Raman spectroscopy and photochemistry of  $(\eta^5-C_5H_5)(OC)_2Fe-SiH_2R$  ( $R = H, CH_3$ ) in comparison with density functional calculations, 225

## Diazabutadiene

Synthesis and redox properties of the cycloheptatrienylmolybdenum complexes  $[MoX(N-N)(\eta-C_7H_7)]^{z+}$ , ( $N-N = 2,2'$ -bipyridine or 1,4-Bu<sub>2</sub>'-1,3-diazabutadiene;  $z = 0$ ,  $X = Br$  or Me;  $z = 1$ ,  $X = NCMe, CNBu'$  or CO), 151

## Diazo alkanes

Cycloadditionsreaktionen von Molybdän- und Wolfram-Phosphoniumkomplexen mit Diazoethylacetat: Synthese und strukturelle Charakterisierung von drei- und fünf-gliedrigen Phosphametallacyclen: Phosphenium-Komplexe, 39, 271

## Diels–Alder reaction

Diels–Alder reactions of C-phenylated siloles with 1,4-epoxy-1,4-dihydropthalalene, 85

## Dimerization

A straightforward synthesis of symmetrical polyenyynes by dimerization reactions of silyl derivatives, 251

## Dimethylsilylene

Paramagnetic intermediates in the photolysis of 7-silanorbornadiene studied by means of spin chemistry method, 73

di-*n*-Butyltin dipropionates

Synthesis, structures and in vitro antitumor activity of some germanium-substituted di-*n*-butyltin dipropionates, 103

## Diolefin

(1-Phenyl-3-methyl-4-acetylpyrazolon-5-ato)rhodium(I) complexes, synthesis, structural and spectroscopical characterization: Reactivity of diolefin- and dicarbonyl-rhodium complexes toward N-, P- and O-donors, 187

## Diynes

A straightforward synthesis of symmetrical polyenyynes by dimerization reactions of silyl derivatives, 251

## Ephedrine

New chiral zwitterionic iron hydride complexes with 'ephosium' and 'valphosium' ligands, 117

## Ethylene

Polymerization of ethylene catalyzed by half-metallocene complexes of niobium, tantalum, and zirconium bearing *o*-xylylene or anthracene as an auxiliary ligand: molecular structure of  $[Mg_2Cl_3(THF)_6][ZrCl_2(\eta^5-C_5Me_5)(\eta-1-4-anthracene)]$ , 111

## Ferrocene

Regioselectivity of alkylation of the naphthalene fragment in the opening of a small ring in 3-ferrocenyl-3-(1-naphthyl)cyclopropene, Z-2-bromo-1-ferrocenyl-1-(1-naphthyl)cyclopropane, and 1-ferrocenyl-1-(1-naphthyl)cyclopropane, 175

## Formato complex

Syntheses and reactivity of oxo niobocene complexes  $Cp_2^*\text{Nb}(=\text{O})\text{X}$  ( $\text{X} = \text{H}, \text{OCH}_3$ ) and crystal structures of  $[\text{Cp}_2^*\text{Nb}(\text{OH})\text{F}] \text{BF}_4^-$  and  $\text{Cp}_2^*\text{Nb}(=\text{O})\text{OC}(\text{O})\text{H}$  ( $\text{Cp}^* = \eta^5\text{-C}_5\text{Me}_5$ ), 203

*gem*-Dilithioalkenes

Formation and rearrangement of *gem*-dilithiodiphenylethene, 143

## High-pressure chemistry

Diels-Alder reactions of C-phenylated siloles with 1,4-epoxy-1,4-dihydronaphthalene, 85

## H(Si)/H(C)scrambling

Laser-induced decomposition of silacyclobutane: extensive H(Si)/H(C) scrambling via 1,2-H shift in silene and radical reactions, 263

## Hydrido-clusters

Reactions of  $[\text{Os}_3(\mu\text{-H})_2(\text{CO})_{10}]$  with  $[\text{Rh}(\text{COD})(\text{L})\text{I}]$  (COD = cycloocta-1,5-diene; L = 2,2'-bipyridine, 1,10-phenanthroline and 4,4'-diphenyl-2,2'-bipyridyl): crystal and molecular structures of  $[\text{Os}_3\text{Rh}(\mu\text{-H})_3(\text{CO})_{10}(\eta^4\text{-COD})]$ ,  $[\text{Os}_3\text{Rh}(\mu\text{-H})_2(\text{CO})_8(\mu\text{-CO})(\mu\text{-I})(\eta^4\text{-COD})]$  and  $[\text{Os}_3\text{Rh}(\mu\text{-H})_2(\text{CO})_8(\mu\text{-CO})(\mu\text{-I})(\text{bipy})]$ , 237

## Hydrogenation

Ruthenium(II) complexes containing both arene and functionalized phosphines. Synthesis and catalytic activity for the hydrogenation of styrene and phenylacetylene, 165

## Indenyl ligand

Chiral lanthanocene complexes with an ether-functionalized indene ligand: synthesis and structure of bis{1-(2-methoxyethyl)-indenyl}lanthanocene chlorides, 21

## Infrared spectroscopy

Synthesis, structures and in vitro antitumor activity of some germanium-substituted di-*n*-butyltin dipropionates, 103

## Iron

Isolation and characterization of  $[\text{Fe}_2(\text{CO})_6\text{Se}_2\{\mu\text{-}(\text{CO})_3\text{Cr}(\eta^5\text{-C}_5\text{H})(\text{CH}_2\text{Ph})(\text{Ph})(\text{OEt})\}]$ ,  $[(\text{CO})_6\text{Fe}_2\{\mu\text{-EC}(\text{Ph})=\text{C}(\text{E}')\text{C}(\text{H})(\text{OEt})\}]_2$  and  $[(\text{CO})_6\text{Fe}_2\{\mu\text{-SC}(\text{H})(\text{Ph})\text{C}(\text{Te})=\text{C}(\text{H})(\text{OEt})\}]$  from the thermolysis of Fischer carbene adducts  $[(\text{CO})_6\text{Fe}_2\text{EE}'\{\mu\text{-C}(\text{Ph})=\text{C}-\text{C}(\text{OEt})=\text{Cr}(\text{CO})_5\}]$  (E, E' = Se and E = S, E' = Te), 159

## Lanthanide chlorides

Chiral lanthanocene complexes with an ether-functionalized indene ligand: synthesis and structure of bis{1-(2-methoxyethyl)-indenyl}lanthanocene chlorides, 21

## Lanthanocene amides

Synthesis of bis(methylcyclopentadienyl)(piperidino)lanthanoids and their catalytic behavior for polymerization of methyl methacrylate, 9

## Laser-induced decomposition

Laser-induced decomposition of silacyclobutane: extensive H(Si)/H(C) scrambling via 1,2-H shift in silene and radical reactions, 263

## Lithiation

Formation and rearrangement of *gem*-dilithiodiphenylethene, 143

## Lithiumorganic compounds

Formation and rearrangement of *gem*-dilithiodiphenylethene, 143

## Magnetic field effect

Paramagnetic intermediates in the photolysis of 7-silanorbornadiene studied by means of spin chemistry method, 73

## Matrix isolation

Matrix isolation Raman spectroscopy and photochemistry of  $(\eta^5\text{-C}_5\text{H}_5)(\text{OC})_2\text{Fe-SiH}_2\text{R}$  ( $\text{R} = \text{H}, \text{CH}_3$ ) in comparison with density functional calculations, 225

MeReO<sub>3</sub>-UHP

A catalytic pathway for the conversion of tungsten-silanes into tungsten-silanol, 259

## Metal amide

Synthesis and characterization of *rac*-[ethylene-1,2-bis( $\eta^5\text{-4,5,6,7-tetrahydro-1-indenyl}$ )]zirconium bisamides (EBTHI)Zr-(NHR)<sub>2</sub>, 287

## Metal clusters

The first structurally characterized trinickel cluster with an open structure: Crystal and molecular structure of  $\text{CpNi}[\mu\text{-}\eta^4\text{-PhC=C(Ph)-C(Ph)=CPh}]\text{Ni}(\mu\text{-}\eta^2\text{-}\eta^2\text{-PhC=C(Ph)-NiCp})$ , 217

## Metallated compounds

Synthesis of complexes of platinum (II) with *C,N,N'*-terdentate Schiff base donor ligands. Crystal and molecular structure of  $[\text{Pt}\{3\text{-Me-4-MeOC}_6\text{H}_2\text{C}(\text{H})=\text{NCH}_2\text{CH}_2\text{NMMe}_2\}(\text{Me})]$ , 93

## Metallo-silanes

A catalytic pathway for the conversion of tungsten-silanes into tungsten-silanol, 259

## Metallo-silanol

A catalytic pathway for the conversion of tungsten-silanes into tungsten-silanol, 259

## Methyl vinyl ketone

Reactivity of bis(ethylene) complexes of molybdenum(0) versus  $\alpha,\beta$ -unsaturated carbonyl compounds. Crystal and molecular structure of  $\text{Mo}(\text{H}_2\text{C=CH-COOMe})_3(\text{PMe}_3)$ , 211

## MMA polymerization

Synthesis of bis(methylcyclopentadienyl)(piperidino)lanthanoids and their catalytic behavior for polymerization of methyl methacrylate, 9

## Molecular orbital schemes

Zur Elektronenstruktur metallorganischer Komplexe der f-Elemente XLVII. Gelingt die Aufklärung der Elektronenstrukturen von  $\eta^3\text{-Allylverbindungen der Lanthaniden anhand der Kristallfeld-Parameter von Heteroallylkomplexen?}$ , 125

## Molybdenum

Reactivity of bis(ethylene) complexes of molybdenum(0) versus  $\alpha,\beta$ -unsaturated carbonyl compounds. Crystal and molecular structure of  $\text{Mo}(\text{H}_2\text{C=CH-COOMe})_3(\text{PMe}_3)$ , 211

Synthesis and redox properties of the cycloheptatrienylmolybdenum complexes  $[\text{MoX}(\text{N-N})(\eta\text{-C}_7\text{H}_7)]^{z+}$ , ( $\text{N-N} = 2,2'\text{-bipyridine}$  or  $1,4\text{-Bu}_2\text{'-1,3-diazabutadiene}$ ;  $z = 0$ , X = Br or Me;  $z = 1$ , X = NCMe, CNBu<sup>t</sup> or CO), 151

## Molybdenum(II)

Seven-coordinate complexes of molybdenum(II) and tungsten(II) containing phosphite donor ligands: X-ray crystal structures of  $[\text{WI}_2(\text{CO})_3\{\text{P}(\text{O}^i\text{Pr})_3\}_2]$  and  $[\text{WI}_2(\text{CO})_2\{\text{P}(\text{OMe})_3\}_3]$ , 245

## Naphthalene

Regioselectivity of alkylation of the naphthalene fragment in the opening of a small ring in 3-ferrocenyl-3-(1-naphthyl)cyclopropene, Z-2-bromo-1-ferrocenyl-1-(1-naphthyl)cyclopropane, and 1-ferrocenyl-1-(1-naphthyl)cyclopropane, 175

## Neodymium

Zur Elektronenstruktur metallorganischer Komplexe der f-Elemente XLVII. Gelingt die Aufklärung der Elektronenstrukturen von  $\eta^3\text{-Allylverbindungen der Lanthaniden anhand der Kristallfeld-Parameter von Heteroallylkomplexen?}$ , 125

## Nickel

The first structurally characterized trinickel cluster with an open structure: Crystal and molecular structure of  $\text{CpNi}[\mu\text{-}\eta^4\text{-PhC=C(Ph)-C(Ph)=CPh}]\text{Ni}(\mu\text{-}\eta^2\text{-}\eta^2\text{-PhC=C(Ph)-NiCp})$ , 217

## Nickelocene

The first structurally characterized trinickel cluster with an open structure: Crystal and molecular structure of  $\text{Cp}_2\text{Ni}[\mu\text{-}\eta^4\text{-PhC=C(Ph)-C(Ph)=CPh}]\text{Ni}(\mu\text{-}\eta^2\text{-}\eta^2\text{-PhC=CPh})\text{-NiCp}$ , 217

## Niobocene

Syntheses and reactivity of oxo niobocene complexes  $\text{Cp}_2^*\text{Nb}(=\text{O})\text{X}$  ( $\text{X} = \text{H}, \text{OCH}_3$ ) and crystal structures of  $[\text{Cp}_2^*\text{Nb}(\text{OH})\text{F}] \text{BF}_4$  and  $\text{Cp}_2^*\text{Nb}(=\text{O})\text{OC(O)H}$  ( $\text{Cp}^* = \eta^5\text{-C}_5\text{Me}_5$ ), 203

## Olefin complexes

Reactivity of bis(ethylene) complexes of molybdenum(0) versus  $\alpha,\beta$ -unsaturated carbonyl compounds. Crystal and molecular structure of  $\text{Mo}(\text{H}_2\text{C=CH-COOMe})_3(\text{PMe}_3)$ , 211

## Opening of a three-membered ring

Regioselectivity of alkylation of the naphthalene fragment in the opening of a small ring in 3-ferrocenyl-3-(1-naphthyl)cyclopropene, Z-2-bromo-1-ferrocenyl-1-(1-naphthyl)cyclopropane, and 1-ferrocenyl-1-(1-naphthyl)cyclopropane, 175

## Optical spectra

Zur Elektronenstruktur metallorganischer Komplexe der f-Elemente XLVII. Gelingt die Aufklärung der Elektronenstrukturen von  $\eta^3$ -Allylverbindungen der Lanthaniden anhand der Kristallfeld-Parameter von Heteroallylkomplexen?, 125

## Osmium

Reactions of  $[\text{Os}_3(\mu\text{-H})_2(\text{CO})_{10}]$  with  $[\text{Rh}(\text{COD})(\text{L})\text{I}]$  ( $\text{COD} = \text{cycloocta-1,5-diene}; \text{L} = 2,2'\text{-bipyridine}, 1,10\text{-phenanthroline}$  and  $4,4'\text{-diphenyl-2,2'-dipyridyl}$ ): crystal and molecular structures of  $[\text{Os}_3\text{Rh}(\mu\text{-H})_3(\text{CO})_{10}(\eta^4\text{-COD})]$ ,  $[\text{Os}_3\text{Rh}(\mu\text{-H})_2(\text{CO})_8(\mu\text{-CO})(\mu\text{-I})(\eta^4\text{-COD})]$  and  $[\text{Os}_3\text{Rh}(\mu\text{-H})_2(\text{CO})_8(\mu\text{-CO})(\mu\text{-I})(\text{bipy})]$ , 237

## Oxidation

New cationic rhodium–amine complexes and their implication in the catalytic anti-Markovnikov oxidative amination of styrenes, 277

## Oxofunctionalization

A catalytic pathway for the conversion of tungsten-silanes into tungsten-silanols, 259

## Oxo ligands

Syntheses and reactivity of oxo niobocene complexes  $\text{Cp}_2^*\text{Nb}(=\text{O})\text{X}$  ( $\text{X} = \text{H}, \text{OCH}_3$ ) and crystal structures of  $[\text{Cp}_2^*\text{Nb}(\text{OH})\text{F}] \text{BF}_4$  and  $\text{Cp}_2^*\text{Nb}(=\text{O})\text{OC(O)H}$  ( $\text{Cp}^* = \eta^5\text{-C}_5\text{Me}_5$ ), 203

## Oxygen complexes

Paramagnetic intermediates in the photolysis of 7-silanorbornadiene studied by means of spin chemistry method, 73

*o*-Xylylene

Polymerization of ethylene catalyzed by half-metallocene complexes of niobium, tantalum, and zirconium bearing *o*-xylylene or anthracene as an auxiliary ligand: molecular structure of  $[\text{Mg}_2\text{Cl}_3(\text{THF})_6][\text{ZrCl}_2(\eta^5\text{-C}_5\text{Me}_5)(\eta\text{-1-4-anthracene})]$ , 111

## Palladium

New palladium (substituted 1,10-phenanthroline) bis(methoxycarbonyl) complexes  $[\text{Pd}(\text{L-L})(\text{CO}_2\text{CH}_3)_2]$ : preparation and structural features, 37

Synthesis and X-ray structure of a novel 12-nuclear cluster  $\text{Pd}_{12}(\text{CO})_{12}(\text{PBu}_3^n)_6$ , 15

## Paramagnetic susceptibility

Zur Elektronenstruktur metallorganischer Komplexe der f-Elemente XLVII. Gelingt die Aufklärung der Elektronenstrukturen von  $\eta^3$ -Allylverbindungen der Lanthaniden anhand der Kristallfeld-Parameter von Heteroallylkomplexen?, 125

## Phenanthroline

(1-Phenyl-3-methyl-4-acetylpyrazolon-5-ato)rhodium(I) complexes, synthesis, structural and spectroscopical characterization: Reactivity of diolefin- and dicarbonyl-rhodium complexes toward N-, P- and O-donors, 187

## Phenanthrolines

New palladium (substituted 1,10-phenanthroline) bis(methoxycarbonyl) complexes  $[\text{Pd}(\text{L-L})(\text{CO}_2\text{CH}_3)_2]$ : preparation and structural features, 37

## Phosphametallacycles

Cycloadditionsreaktionen von Molybdän- und Wolfram-Phosphoniumkomplexen mit Diazoethylacetat: Synthese und strukturelle Charakterisierung von drei- und fünf-gliedrigen Phosphametallacyclen: Phosphenium-Komplexe, 39, 271

## Phosphenium complexes

Cycloadditionsreaktionen von Molybdän- und Wolfram-Phosphoniumkomplexen mit Diazoethylacetat: Synthese und strukturelle Charakterisierung von drei- und fünf-gliedrigen Phosphametallacyclen: Phosphenium-Komplexe, 39, 271

## Phosphine

Ruthenium(II) complexes containing both arene and functionalized phosphines. Synthesis and catalytic activity for the hydrogenation of styrene and phenylacetylene, 165

## Phosphines

Synthesis and X-ray structure of a novel 12-nuclear cluster  $\text{Pd}_{12}(\text{CO})_{12}(\text{PBu}_3^n)_6$ , 15

## Phosphites

Seven-coordinate complexes of molybdenum(II) and tungsten(II) containing phosphite donor ligands: X-ray crystal structures of  $[\text{WI}_2(\text{CO})_3\{\text{P}(\text{O}^i\text{Pr})_3\}_2]$  and  $[\text{WI}_2(\text{CO})_2\{\text{P}(\text{OMe})_3\}_3]$ , 245

## Phospholes

Study of the planarization of the tricordinate phosphorus in phospholes; photoelectron spectra and structure of partially planarized phospholes, 29

## Photochemistry

Matrix isolation Raman spectroscopy and photochemistry of  $(\eta^5\text{-C}_5\text{H}_5)(\text{OC})_2\text{Fe-SiH}_2\text{R}$  ( $\text{R} = \text{H}, \text{CH}_3$ ) in comparison with density functional calculations, 225

## Photoelectron spectra

Study of the planarization of the tricordinate phosphorus in phospholes; photoelectron spectra and structure of partially planarized phospholes, 29

## Platinum(II) complexes

Synthesis of complexes of platinum (II) with *C,N,N'*-terdentate Schiff base donor ligands. Crystal and molecular structure of  $[\text{Pt}\{3\text{-Me-4-MeOC}_6\text{H}_2\text{C(H)=NCH}_2\text{CH}_2\text{NMe}_2\}(\text{Me})]$ , 93

## Polymerization

Polymerization of ethylene catalyzed by half-metallocene complexes of niobium, tantalum, and zirconium bearing *o*-xylylene or anthracene as an auxiliary ligand: molecular structure of  $[\text{Mg}_2\text{Cl}_3(\text{THF})_6][\text{ZrCl}_2(\eta^5\text{-C}_5\text{Me}_5)(\eta\text{-1-4-anthracene})]$ , 111

## Quasi dianion complexes

Formation and rearrangement of *gem*-dilithiodiphenylethene, 143

## Raman spectroscopy

Matrix isolation Raman spectroscopy and photochemistry of  $(\eta^5\text{-C}_5\text{H}_5)(\text{OC})_2\text{Fe-SiH}_2\text{R}$  ( $\text{R} = \text{H}, \text{CH}_3$ ) in comparison with density functional calculations, 225

## Reactivity

Syntheses and reactivity of oxo niobocene complexes  $\text{Cp}_2^*\text{Nb}(=\text{O})\text{X}$  ( $\text{X} = \text{H}, \text{OCH}_3$ ) and crystal structures of  $[\text{Cp}_2^*\text{Nb}(\text{OH})\text{F}] \text{BF}_4$  and  $\text{Cp}_2^*\text{Nb}(=\text{O})\text{OC(O)H}$  ( $\text{Cp}^* = \eta^5\text{-C}_5\text{Me}_5$ ), 203

## Rearrangement

Formation and rearrangement of *gem*-dilithiodiphenylethene, 143

## Redox chemistry

Synthesis and redox properties of the cycloheptatrienylmolybdenum complexes  $[\text{MoX}(\text{N-N})(\eta\text{-C}_7\text{H}_7)]^{z+}$ , ( $\text{N-N} = 2,2'\text{-bipyridine}$  or  $1,4\text{-Bu}_2\text{'-1,3-diazabutadiene}$ ;  $z = 0$ ,  $\text{X} = \text{Br}$  or  $\text{Me}$ ;  $z = 1$ ,  $\text{X} = \text{NCMe}, \text{CNBu}'$  or  $\text{CO}$ ), 151

## Rhodium

(1-Phenyl-3-methyl-4-acetylpyrazolon-5-ato)rhodium(I) complexes, synthesis, structural and spectroscopical characterization: Reactivity of diolefin- and dicarbonyl-rhodium complexes toward N-, P- and O-donors, 187

Reactions of  $[Os_3(\mu-H)_2(CO)_{10}]$  with  $[Rh(COD)(L)I]$  (COD = cycloocta-1,5-diene; L = 2,2'-bipyridine, 1,10-phenanthroline and 4,4'-diphenyl-2,2'-dipyridyl): crystal and molecular structures of  $[Os_3Rh(\mu-H)_3(CO)_{10}(\eta^4\text{-COD})]$ ,  $[Os_3Rh(\mu-H)_2(CO)_8(\mu\text{-CO})(\mu\text{-I})(\eta^4\text{-COD})]$  and  $[Os_3Rh(\mu-H)_2(CO)_8(\mu\text{-CO})(\mu\text{-I})(\text{bipy})]$ , 237

## Rhodium complexes

New cationic rhodium–amine complexes and their implication in the catalytic anti-Markovnikov oxidative amination of styrenes, 277

## Ruthenium

Ruthenium(II) complexes containing both arene and functionalized phosphines. Synthesis and catalytic activity for the hydrogenation of styrene and phenylacetylene, 165

## Schiff base complexes

Synthesis of complexes of platinum (II) with C,N,N'-terdentate Schiff base donor ligands. Crystal and molecular structure of  $[Pt\{3\text{-Me-4-MeOC}_6H_2C(H)=NCH_2CH_2NMe_2\}(Me)]$ , 93

## Seven-coordinates

Seven-coordinate complexes of molybdenum(II) and tungsten(II) containing phosphite donor ligands: X-ray crystal structures of  $[W_2(CO)_3\{P(O^{\prime}Pr)_3\}_2]$  and  $[W_2(CO)_2\{P(OMe)_3\}_3]$ , 245

## Silacyclobutane

Laser-induced decomposition of silacyclobutane: extensive H(Si)/H(C) scrambling via 1,2-H shift in silene and radical reactions, 263

## 7-Silanorbornene

Diels–Alder reactions of C-phenylated siloles with 1,4-epoxy-1,4-dihydronephthalene, 85

## Silene

Laser-induced decomposition of silacyclobutane: extensive H(Si)/H(C) scrambling via 1,2-H shift in silene and radical reactions, 263

## Silicon and compounds

A straightforward synthesis of symmetrical polyenydiynes by dimerization reactions of silyl derivatives, 251

## Silyl metal complexes

Matrix isolation Raman spectroscopy and photochemistry of  $(\eta^5\text{-C}_5H_5)(OC)_2Fe\text{-SiH}_2R$  (R = H, CH<sub>3</sub>) in comparison with density functional calculations, 225

## Single crystal X-ray study

Synthesis and X-ray structure of a novel 12-nuclear cluster  $Pd_{12}(CO)_{12}(PBu_3^n)_6$ , 15

## Stereochemistry

Diels–Alder reactions of C-phenylated siloles with 1,4-epoxy-1,4-dihydronephthalene, 85

## Structures

Syntheses and reactivity of oxo niobocene complexes  $Cp_2^*\text{Nb}(=O)X$  (X = H, OCH<sub>3</sub>) and crystal structures of  $[Cp_2^*\text{Nb}(OH)F]BF_4$  and  $Cp_2^*\text{Nb}(=O)OC(O)H$  ( $Cp^* = \eta^5\text{-C}_5\text{Me}_5$ ), 203

## Synthesis

Chiral lanthanocene complexes with an ether-functionalized indene ligand: synthesis and structure of bis{1-(2-methoxyethyl)-indenyl}lanthanocene chlorides, 21

Synthesis of bis(methylcyclopentadienyl)(piperidino)lanthanoids and their catalytic behavior for polymerization of methyl methacrylate, 9

## Tantalum

Polymerization of ethylene catalyzed by half-metallocene complexes of niobium, tantalum, and zirconium bearing *o*-xylylene or anthracene as an auxiliary ligand: molecular structure of  $[Mg_2Cl_3(\text{THF})_6][ZrCl_2(\eta^5\text{-C}_5\text{Me}_5)(\eta\text{-1-4-anthracene})]$ , 111

## Thiophene

Synthesis, characterization and decomposition patterns for thiylene bridged dinuclear biscarbene complexes of manganese and chromium in refluxing carbon disulphide and acetone, 133

## Tungsten(II)

Seven-coordinate complexes of molybdenum(II) and tungsten(II) containing phosphite donor ligands: X-ray crystal structures of  $[W_2(CO)_3\{P(O^{\prime}Pr)_3\}_2]$  and  $[W_2(CO)_2\{P(OMe)_3\}_3]$ , 245

## Unsaturated amides

Reactivity of bis(ethylene) complexes of molybdenum(0) versus  $\alpha,\beta$  unsaturated carbonyl compounds. Crystal and molecular structure of  $Mo(H_2C=CH\text{-COOMe})_3(PMe_3)$ , 211

## Unsaturated esters

Reactivity of bis(ethylene) complexes of molybdenum(0) versus  $\alpha,\beta$  unsaturated carbonyl compounds. Crystal and molecular structure of  $Mo(H_2C=CH\text{-COOMe})_3(PMe_3)$ , 211

## Valinol

New chiral zwitterionic iron hydride complexes with ‘ephosium’ and ‘valphosium’ ligands, 117

## X-ray

Diels–Alder reactions of C-phenylated siloles with 1,4-epoxy-1,4-dihydronephthalene, 85

## X-ray diffraction

Isolation and characterization of  $[Fe_2(CO)_6Se_2\{\mu\text{-}(CO)_3Cr(\eta^5\text{-C}_5(H)(CH_2Ph)(Ph)(OEt)\}]$ ,  $[(CO)_6Fe_2\{\mu\text{-EC(Ph)=C(E')C(H)(OEt)}\}_2$  and  $[(CO)_6Fe_2\{\mu\text{-SC(H)(Ph)C(Te)=C(H)(OEt)}\}]$  from the thermolysis of Fischer carbene adducts  $[(CO)_6Fe_2EE'\{\mu\text{-C(Ph)=C-C(OEt)=Cr(CO)_5}\}]$  (E, E' = Se and E = S, E' = Te), 159

## X-ray structural analysis

Regioselectivity of alkylation of the naphthalene fragment in the opening of a small ring in 3-ferrocenyl-3-(1-naphthyl)cyclopropene, Z-2-bromo-1-ferrocenyl-1-(1-naphthyl)cyclopropane, and 1-ferrocenyl-1-(1-naphthyl)cyclopropane, 175

## X-ray structure

New palladium (substituted 1,10-phenanthroline) bis(methoxycarbonyl) complexes  $[Pd(L-L)(CO_2CH_3)_2]$ : preparation and structural features, 37

Synthesis of bis(methylcyclopentadienyl)(piperidino)lanthanoids and their catalytic behavior for polymerization of methyl methacrylate, 9

## Yttrium

Chiral lanthanocene complexes with an ether-functionalized indene ligand: synthesis and structure of bis{1-(2-methoxyethyl)-indenyl}lanthanocene chlorides, 21

## Zirconium

Polymerization of ethylene catalyzed by half-metallocene complexes of niobium, tantalum, and zirconium bearing *o*-xylylene or anthracene as an auxiliary ligand: molecular structure of  $[Mg_2Cl_3(\text{THF})_6][ZrCl_2(\eta^5\text{-C}_5\text{Me}_5)(\eta\text{-1-4-anthracene})]$ , 111

Synthesis and characterization of *rac*-[ethylene-1,2-bis( $\eta^5\text{-4,5,6,7-tetrahydro-1-indenyl}$ )zirconium bisamides (EBTHI)Zr(NHR)<sub>2</sub>, 287

## Zirconocene

Synthesis and characterization of *rac*-[ethylene-1,2-bis( $\eta^5\text{-4,5,6,7-tetrahydro-1-indenyl}$ )zirconium bisamides (EBTHI)Zr(NHR)<sub>2</sub>, 287

## Zwitterionic hydrides

New chiral zwitterionic iron hydride complexes with ‘ephosium’ and ‘valphosium’ ligands, 117