

Contents

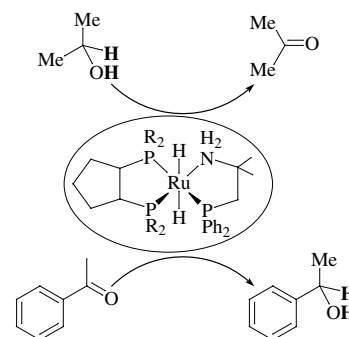
Regular papers

Lutz Dahlenburg, Christian Kühnlein

J. Organomet. Chem. 690 (2005) 1

Functional phosphines XV. Ruthenium complexes containing $C_5H_8(PR_2)_2$ and $Ph_2PCH_2CR'_2NH_2$ ligands (R = Me, Ph, OPh; R' = H, Me): synthesis and application to homogeneous $>C=O$ hydrogenation and transfer hydrogenation

Treatment of $[Ru(\eta^4-C_8H_{12})\{\eta^3-(CH_2)_2-CMe\}_2]$ with C_2 chiral cyclopentane-1,2-diyl-bis(phosphines) *trans*-1,2- $C_5H_8(PR_2)_2$ in hexane afforded the chelate complexes $[Ru\{\eta^3-(CH_2)_2CMe\}_2\{1,2-C_5H_8(PR_2)_2\}]$, where R = Me (**2**), Ph (**3**), NC_5H_{10} (**4**), and OPh (**5**).

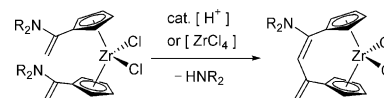


Stephanie Knüppel, Cun Wang, Gerald Kehr, Roland Fröhlich, Gerhard Erker

J. Organomet. Chem. 690 (2005) 14

Bis(enamino-Cp) Group 4 metal complex chemistry: developing a Mannich-type carbon-carbon coupling reaction at the bent metallocene framework

Deprotonation of 6-methyl-6-dialkylamino-fulvenes (**2**) yield the enamino-substituted cyclopentadienide reagents (**3**). Their treatment with, e.g., zirconium tetrachloride generates the bis(dialkylaminoethenyl)zirconocene dichloride complexes that subsequently undergo a facile acid-catalyzed intramolecular Mannich-type carbon-carbon coupling reaction to yield the unsaturated aminobutadien-1,3-diyl-bridged ansa-metallocenes.

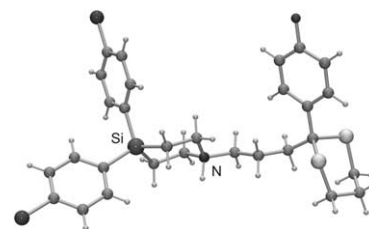


Tilman Heinrich, Christian Burschka, Martin Penka, Brigitte Wagner, Reinhold Tacke

J. Organomet. Chem. 690 (2005) 33

4-Silapiperidine and 4-silapiperidinium derivatives: syntheses and structural characterization

A series of novel 4-silapiperidine and 4-silapiperidinium derivatives, with two silicon-bound aryl groups and various *N*-organyl groups, have been synthesized and structurally characterized. These investigations provide the basis for the development of novel silicon-based drugs containing a 4-silapiperidine or 4-silapiperidinium skeleton.

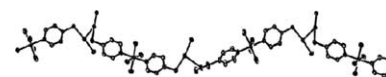


Keiko Nunokawa, Satoru Onaka, Yoshiro Mizuno, Kazuya Okazaki, Tetsuya Sunahara, Mitsuhiro Ito, Masanobu Yaguchi, Hiroyuki Imai, Katsuya Inoue, Tomoji Ozeki, Hirokazu Chiba, Takafumi Yosida

J. Organomet. Chem. 690 (2005) 48

Exploration on Au(S-4-py)PR₃ complexes as a viable building block for constructing heteronuclear supramolecules: synthesis and X-ray study on M(acac')₂[Au(S-4-py)PR₃]₂(ClO₄)_x (M = Cr, Cu; acac' = acetylacetonate, hexafluoroacetylacetonate; x = 0 or 1)

Transition metal acetylacetonates, M(acac')₂(ClO₄)_x (M = Cr, Cu; acac' = acetylacetonate, hexafluoroacetylacetonate; x = 0 or 1) were reacted with Au(S-4-py)L (L = PPh₃, PPh₂(2-py)) as a ligand. A trimetallic monomer, Au-Cr-Au, **5** was yielded from [Cr(acac)₂(H₂O)₂](ClO₄). However, [Cu(hfac)₂] yielded a dimer **6** composed of a trimetallic monomer (Au-Cu-Au) moiety and an infinite chain polymer (··Au-Cu-Au··Au-Cu-Au··) **7**. Basic structures of **6** and **7** are affected by L; **6** has a *cis* geometry, while **7** a *trans* geometry.

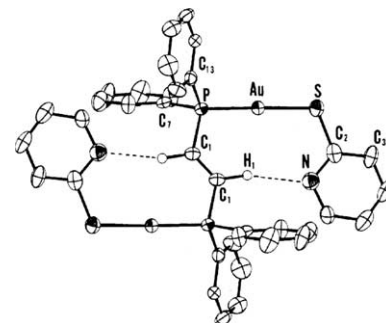


Satoru Onaka, Masanobu Yaguchi, Ryuichiro Yamauchi, Tomoji Ozeki, Mitsuhiro Ito, Tetsuya Sunahara, Yukako Sugiura, Michito Shiotsuka, Keiko Nunokawa, Makoto Horibe, Kazuya Okazaki, Akifumi Iida, Hirokazu Chiba, Katsuya Inoue, Hiroyuki Imai, Katsuya Sako

J. Organomet. Chem. 690 (2005) 57

The effect of carbon chain length of the diphosphine ligand on the aurophilic interaction. Synthesis and X-ray structural study for a series of Au(I) compounds with Ph₂P-R-PPh₂ and S-(CH₂)_n-py ligands

A series of (Au-SR)₂(μ-diphos) compounds have been synthesized and their structures have been determined by single crystal X-ray analysis. Among them, 2-S-py ligand contracts Au-Au distances for diphosphines with C=C and C-C backbones. Intramolecular =C-H···N(py) interaction works cooperatively for this short Au-Au contact in (Au-2-S-py)₂(μ-*t*-dpen).

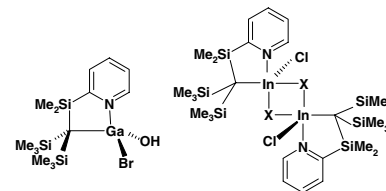


James Howson, Colin Eaborn, Peter B. Hitchcock, Michael S. Hill, J. David Smith

J. Organomet. Chem. 690 (2005) 69

Organometallic compounds of Group 13 elements containing the ligand C(SiMe₃)₂(SiMe₂C₅H₄N-2)

In the monomeric metallacycles AlX₂C(SiMe₃)₂(SiMe₂C₅H₄N-2) (X = Cl or Me), the pyridyl nitrogen is coordinated to aluminium. The metallacycle GaBr(OH)C(SiMe₃)₂(SiMe₂C₅H₄N-2) has a similar structure. The indium compounds [InCl(μ-X)C(SiMe₃)₂(SiMe₂C₅H₄N-2)]₂ (X = Cl or OH) crystallise together as a homogeneous white solid.

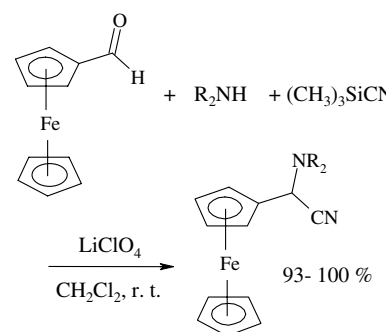


Rozbeh Yousefi, Najmedin Azizi, Mohammad R. Saidi

J. Organomet. Chem. 690 (2005) 76

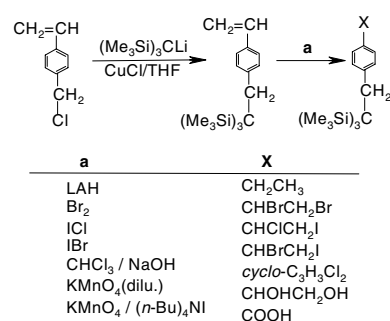
Lithium perchlorate suspend in methylene chloride, a mild, efficient and reusable catalyst for the synthesis of ferrocene aminonitrile derivatives

An efficient method for the synthesis of α-aminonitriles of ferrocene by one-pot three-component reaction of ferrocene-carboxaldehyde, trimethylsilyl cyanide and amines catalyzed by LiClO₄ suspend in CH₂Cl₂ is reported under mild and neutral reaction conditions in high yields and short reactions times.

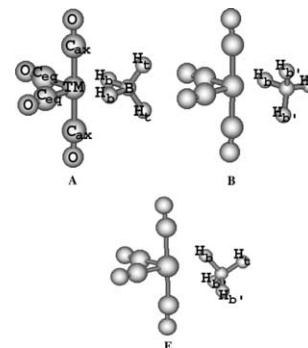


Kazem D. Safa, Mirzaagha Babazadeh*J. Organomet. Chem.* 690 (2005) 79Synthesis and reactions of *p*-vinylbenzyltris-(trimethylsilyl)methane

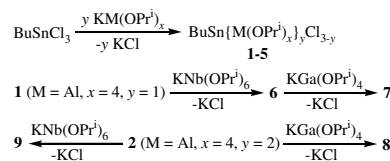
A series of new organometallic compounds $(\text{Me}_3\text{Si})_3\text{CCH}_2\text{C}_6\text{H}_4\text{X}$ ($\text{X} = \text{H}, \text{CH}=\text{CH}_2, \text{CH}_2\text{CH}_3, \text{CHBrCH}_2\text{Br}, \text{CHClCH}_2\text{I}, \text{CHBrCH}_2\text{I}$, *cyclo*- $\text{C}_3\text{H}_3\text{Cl}_2$, CHOHCH_2OH , COOH , CH_2OH) have been synthesized and characterized.

**Alireza Ariafard, Mostafa M. Amiri***J. Organomet. Chem.* 690 (2005) 84Theoretical study on interaction of different coordination modes of BH_4 ligand with transition metal in $[\text{TM}(\text{BH}_4)(\text{CO})_4]^-$ ($\text{TM} = \text{Cr}, \text{Mo}$)

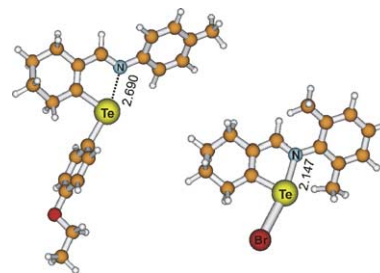
Density functional calculations were performed on bonding and structural features of $[(\eta^n\text{-BH}_4)\text{TM}(\text{CO})_4]^-$ ($n = 1, 2, 3$; $\text{TM} = \text{Cr}, \text{Mo}$) complexes. Calculations show that the ground state is bidentate (A) which is in good agreement with experimental results. It has been found that the bridge and terminal hydrogen atoms will interchange by two pathways: i) twist of BH_4 about one of the bridge B-H (B) and ii) twist of BH_4 about one of the terminal B-H (E).

**Nandu B. Sharma, Anirudh Singh, Ram C. Mehrotra***J. Organomet. Chem.* 690 (2005) 96Synthesis of the first examples of stable heterometallic isopropoxides of an organometallic RSn(IV) moiety

Nine heterometallic isopropoxides containing butyltin(IV) moiety are prepared via metathesis reactions of either butyltin trichloride or an appropriate butyltin(IV) chloride-isopropoxometallate derivative with suitable potassium isopropoxometallates in desired molar ratios. All these derivatives are thermally stable and have been characterized by spectral studies.

**I.D. Sadekov, V.I. Minkin, A.V. Zakharov, A.G. Starikov, G.S. Borodkin, S.M. Aldoshin, V.V. Tkachev, G.V. Shilov, F.J. Berry***J. Organomet. Chem.* 690 (2005) 103Synthesis and structure of *N*-arylimines of β -tellurocyclohexenals with the intramolecular coordination $\text{N} \rightarrow \text{Te}$ bonds

The X-ray determined lengths of the intramolecular coordination $\text{N} \rightarrow \text{Te}$ bonds in molecules of *N*-arylimines of β -tellurocyclohexenals span the range of 2.690–2.147 Å and in the compounds with strong electronegative groups X attached to the tellurium center approach the value characteristic of a standard covalent $\text{N}-\text{Te}$ bond. The DFT calculated energies of the $\text{N} \rightarrow \text{Te}$ bonds vary from 23 kJ mol^{-1} ($\text{X} = \text{Ph}$) to 119 kJ mol^{-1} ($\text{X} = \text{F}$).

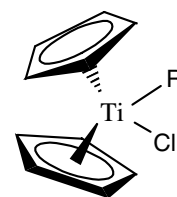


**Rita Meyer, Susan Brink,
Constance E.J. van Rensburg,
Gisela K. Jooné, Helmar Görls, Simon Lotz**

J. Organomet. Chem. 690 (2005) 117

Synthesis, characterization and antitumor properties of titanocene derivatives with thiophene containing ligands

Titanocene complexes $[\text{TiCp}_2(\text{Cl})\text{R}]$, $[\text{TiCp}_2(\text{Cl})\text{SR}]$, $[\text{TiCp}_2(\text{SR})_2]$ with benzothienyl and dibenzothienyl containing ligands were synthesized and studied. Crystal structure determinations of complexes with dibenzothienyl ligands revealed planar heteroaromatic rings. HeLa and COLO 320M tumor cell lines were used in preliminary experiments to examine cell growth inhibition displayed by the compounds.

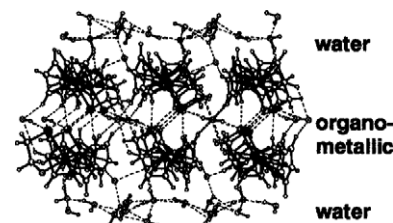


**W. Edward Lindsell, Georgina M. Rosair,
Michael M. Rothmann**

J. Organomet. Chem. 690 (2005) 126

Reactions of α -dithiolate ligands with bis(cyclopentadienyl)molybdenum dichloride; crystal structures of $\text{Mo}(\eta\text{-C}_5\text{H}_5)_2\text{-}\{\text{S}(\text{CH}_2)_n\text{S}\}$ ($n = 2, 3$) and a layered hydrate, $\text{Mo}(\eta\text{-C}_5\text{H}_5)_2(\text{SCH}_2\text{CH}_2\text{O}) \cdot 4.5\text{H}_2\text{O}$

Structurally-characterized bis(cyclopentadienyl)molybdenum(IV) thiolate complexes are reported, including the hydrate $\text{Mo}(\eta\text{-C}_5\text{H}_5)_2(\text{SCH}_2\text{CH}_2\text{O}) \cdot 4.5\text{H}_2\text{O}$, which forms crystals containing double layers of organometallic molecules separated by layers of water.

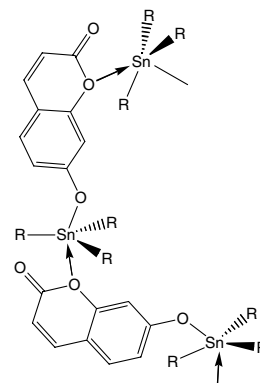


**Mala Nath, Ruchi Jairath, George Eng,
Xueqing Song, Ashok Kumar**

J. Organomet. Chem. 690 (2005) 134

Triorganotin(IV) derivatives of umbelliferone (7-hydroxycoumarin) and their adducts with 1,10-phenanthroline: synthesis, structural and biological studies

The synthesis, structural characterization and biological studies of new triorganotin(IV) derivatives of the general formula $\text{R}_3\text{Sn}(\text{Umb})$ (where, $\text{R} = \text{Me}, n\text{-Bu}$ and Ph ; $\text{Umb} = \text{umbelliferone anion}$) and the adducts of the general formula $\text{R}_3\text{Sn}(\text{Umb}) \cdot \text{phen}$ (where $\text{R} = \text{Me}$ and Ph ; $\text{phen} = 1,10\text{-phenanthroline}$) are reported.

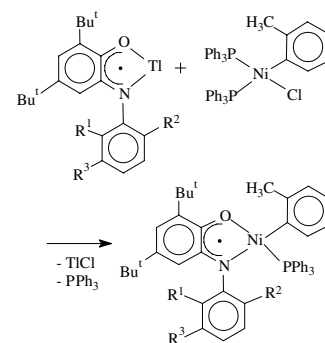


**Andrey I. Poddel'sky, Vladimir K. Cherkasov,
Michail P. Bubnov, Ludmila G. Abakumova,
Gleb A. Abakumov**

J. Organomet. Chem. 690 (2005) 145

EPR study of mono-*o*-iminobenzosemiquinonato nickel(II) complexes with Ni-C σ -bond

New four-coordinate nickel(II) complexes of $(\text{Ph}_3\text{P})\text{Ni}(\textit{o}\text{-Tolyl})(\text{ISQ})$ species with 4,6-di-*tert*-butyl-*N*-aryl-*o*-iminobenzosemiquinonato anion-radical ligands (ISQ) have been prepared and characterized. Complexes contain σ -bound *o*-tolyl and neutral donor ligand PPh_3 . The sterical hindrances of *N*-aryl in *o*-iminobenzosemiquinonato ligands lead to the tetrahedral distortion of square-planar configurations of complexes. Complexes are able to exchange of PPh_3 on some neutral donor ligands.

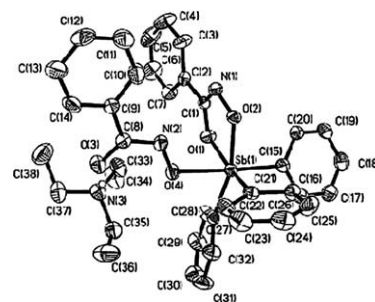


**Guo-Cang Wang, Yong-Na Lu, Jian Xiao,
Lin Yu, Hai-Bin Song, Jin-Shan Li,
Jing-Rong Cui, Rui-Qing Wang,
Fu-Xiang Ran**

J. Organomet. Chem. 690 (2005) 151

Synthesis, crystal structures and in vitro antitumor activities of some organoantimony arylhydroxamates

A series of novel organoantimony arylhydroxamates with the formulae $[\text{Ar}_3\text{SbL}_2]^-[\text{HNEt}_3]^+$ and $(4\text{-CH}_3\text{C}_6\text{H}_4)_4\text{SbL}$ were synthesized and characterized by elemental analysis, IR, ^1H NMR and mass spectroscopy. The crystal structures of $(4\text{-CH}_3\text{C}_6\text{H}_4)_4\text{SbL}$ and $[\text{Ph}_3\text{SbL}_2]^-[\text{HNEt}_3]^+$ were determined by X-ray diffraction. The in vitro antitumor activities of all compounds against six human cancer cells are reported.

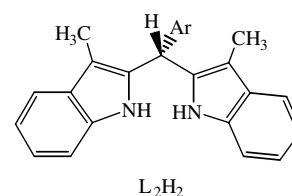


**Mark R. Mason, Doug Ogrin,
Bassam Fneich, Thomas S. Barnard,
Kristin Kirschbaum**

J. Organomet. Chem. 690 (2005) 157

Deprotonated diindolylmethanes as dianionic analogues of scorpionate bis(pyrazolyl)borate ligands: synthesis and structural characterization of representative titanocene and zirconocene complexes

Deprotonated di(3-methylindolyl)methanes (L_2H_2) are introduced as dianionic analogues of scorpionate bis(pyrazolyl)borate ligands. The synthesis and structural characterization of complexes of the type Cp_2TiL_2 and Cp_2ZrL_2 are reported.

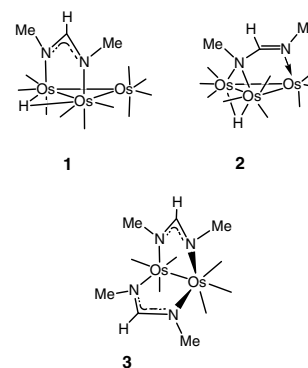


**Yu-Chiao Liu, Wen-Yann Yeh,
Gene-Hsiang Lee, Shie-Ming Peng**

J. Organomet. Chem. 690 (2005) 163

Activation of 1,3,5-trimethyl-1,3,5-triazacyclohexane by $\text{Os}_3(\text{CO})_{12}$ to form amidino $[(\text{MeN})_2\text{CH}]$ cluster complexes

The reaction of $\text{Os}_3(\text{CO})_{12}$ and $(\text{MeNCH}_2)_3$ produces the amidino cluster complexes $(\mu\text{-H})\text{Os}_3(\text{CO})_{10}[\mu, \eta^2\text{-CH}(\text{NMe})_2]$ (**1**), $(\mu\text{-H})\text{Os}_3(\text{CO})_9[\mu_3, \eta^2\text{-CH}(\text{NMe})_2]$ (**2**), and $\text{Os}_2(\text{CO})_6[\mu, \eta^2\text{-CH}(\text{NMe})_2]_2$ (**3**), which have been structurally characterized.

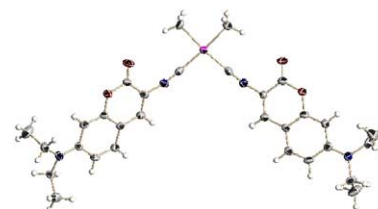


**Craig Anderson, Daniel A. Freedman,
Michael Jennings, Brenda Gray**

J. Organomet. Chem. 690 (2005) 168

Dimethylplatinum (II) complexes with isocyanocoumarin ligands: the crystal structure of *cis*-dimethylbis-(7-diethylamino-3-isocyanocoumarin)platinum(II)

Dimethylplatinum(II) complexes with isocyanocoumarin ligands have been prepared and characterized by IR, NMR, UV/Vis, and emission spectroscopies. $\text{PtMe}_2(\text{Idc})_2$ has been characterized by X-ray diffraction.

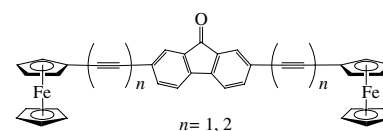


**Wai-Yeung Wong, Guo-Liang Lu,
Ka-Ho Choi, Yan-He Guo**

J. Organomet. Chem. 690 (2005) 177

Carbon-rich organometallics: synthesis and characterization of new ferrocenyl end-capped bis(butadiynyl) fluorene derivatives

A series of carbon-rich fluorene-derived bis(ferrocenylbutadiynyl) complexes were synthesized. The spectroscopic, photophysical, electrochemical and structural properties of these compounds were compared to those of the corresponding bis(ferrocenylethynyl) counterparts.

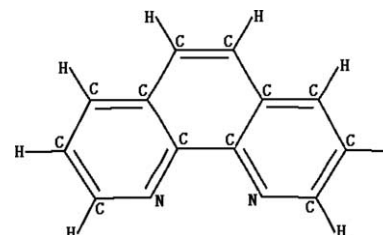


**Xiaojing Wang, Chen Lv, Michihisa Koyama,
Momoji Kubo, Akira Miyamoto**

J. Organomet. Chem. 690 (2005) 187

A theoretical investigation of the photo-induced intramolecular charge transfer excitation of cuprous (I) bis-phenanthroline by density functional theory

This work reported an investigation on the excited state and electronic transfer excitation of cuprous (I) bis-phenanthroline complex by density functional theory.

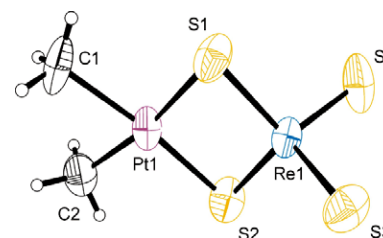


**Haijun Yao, Thomas B. Rauchfuss,
Scott R. Wilson**

J. Organomet. Chem. 690 (2005) 193

$[\text{Me}_8\text{Pt}_4\text{ReS}_4]^-$ and related PtMe_2 -containing clusters derived from tetrathiorhenate

The reactions of $\text{Pt}_2\text{Me}_4(\mu\text{-SMe}_2)_2$ and $[\text{ReS}_4]^-$ in MeCN solution have been investigated. The resulting polyalkylated clusters: $\text{Et}_4\text{N}[\text{ReS}_4\text{PtMe}_2]$ ($\text{Et}_4\text{N}[\mathbf{1}]$), $\text{Et}_4\text{N}[\text{ReS}_4(\text{PtMe}_2)_2]$ ($\text{Et}_4\text{N}[\mathbf{2}]$), and $\text{Et}_4\text{N}[\text{ReS}_4(\text{PtMe}_2)_4]$ ($\text{Et}_4\text{N}[\mathbf{4}]$), were characterized by ^1H , ^{13}C , ^{195}Pt NMR spectroscopy and ESI mass spectrometry. The structure of $\text{Et}_4\text{N}[\mathbf{1}]$ was confirmed by single crystal X-ray diffraction, which demonstrated the expected square-planar and tetrahedral coordination spheres bridged by a pair of sulfur atoms.

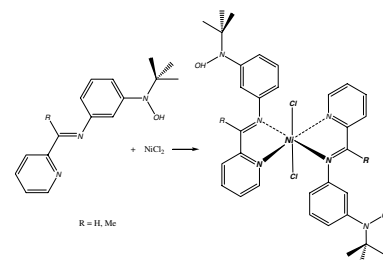


**Carsten Uerpmann, Bernard J.L. Henner,
Christian Guérin, François Carré**

J. Organomet. Chem. 690 (2005) 197

Imino- and bis-imino-pyridines with *N-ter*-butyl-*N*-aminoxyl group: synthesis, oxidation and use as ligand towards M^{2+} (Mn, Ni, Zn) and Gd^{3+}

Imino- and bis-iminopyridine ligands bearing *N-ter*-butylhydroxy groups were synthesized in order to prepare new Mn^{2+} , Ni^{2+} , Zn^{2+} and Gd^{3+} complexes with aminoxy radicals.

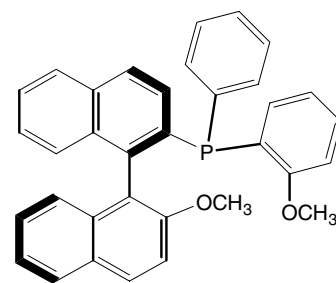


Lee J. Higham, Eoin F. Clarke,
Helge Müller-Bunz, Declan G. Gilheany

J. Organomet. Chem. 690 (2005) 211

P-chirogenic phosphines. MOP/diPAMP hybrids, their oxide crystal structures, reduction studies and alternative syntheses

The synthesis and resolution of the diastereomeric P-chirogenic (*R,R*) and (*R,S*) anisylphenylMOP phosphines is presented. In addition, the crystal structures of both corresponding oxides and their unusual behaviour towards a variety of reducing agents is described.



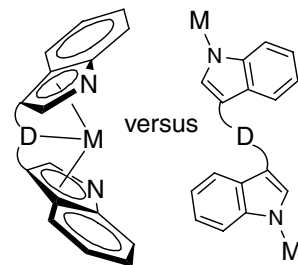
(*R,R*)- and (*R,S*)-10a and b

Jun Wang, Damien N. Stringer,
Michael G. Gardiner, Brian W. Skelton,
Allan H. White

J. Organomet. Chem. 690 (2005) 220

Synthesis of 2,5-bis{(diethyl-3'-indolyl)methyl}furan and its *N,N'*-dimetallated complexes (lithium, sodium and potassium): X-ray crystal structures of 2,5-bis{(diethyl-3'-indolyl)methyl}furan and the polymeric tetrahydrofuran adduct of the dilithiated complex

A series of alkali metal bis(indolide) complexes are reported. The dilithium complex (tetrahydrofuran adduct) has a polymeric structure in the solid state, associated through bridging indolides forming $\{[(\text{THF})_2\text{Li}-\mu_2\text{-NR}_2]_2\}$ rings. ^1H NMR spectroscopy suggests that the dilithium, disodium and dipotassium complexes are likely to display significant metal-indolide structural differences in solution.

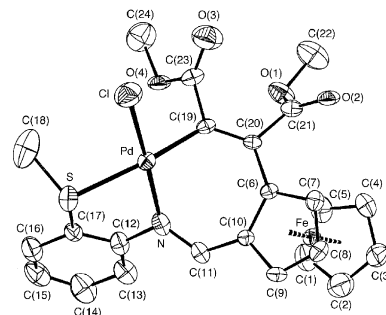


Concepción López, Sonia Pérez,
Xavier Solans, Mercè Font-Bardía

J. Organomet. Chem. 690 (2005) 228

Study of the reactivity of palladacycles containing $[\text{C}(\text{sp}^2, \text{ferrocene}), \text{N}, \text{S}]^-$ or $[\text{C}(\text{sp}^3), \text{N}, \text{S}]^-$ terdentate ligands with symmetric alkynes

The reactions of the cyclopalladated compounds $[\text{Pd}\{[(\eta^5\text{-C}_5\text{H}_3)\text{CH}=\text{N}-(\text{C}_6\text{H}_4-2\text{SMe})]\text{Fe}(\eta^5\text{-C}_5\text{H}_3)\}\text{Cl}]$ and $[\text{Pd}\{(2\text{-CH}_2-4,6\text{-Me}_2\text{-C}_6\text{H}_2)\text{-CH}=\text{N}-(\text{C}_6\text{H}_4-2\text{SMe})\}\text{Cl}]$, containing a $[\text{C}(\text{sp}^2, \text{ferrocene}), \text{N}, \text{S}]^-$ and a $[\text{C}(\text{sp}^3), \text{N}, \text{S}]^-$ terdentate ligand, respectively, with the alkynes: $\text{R}^1\text{-C}\equiv\text{C-R}^1$ (with $\text{R}^1 = \text{CO}_2\text{Me}$, Ph or Et) under different experimental conditions are reported.



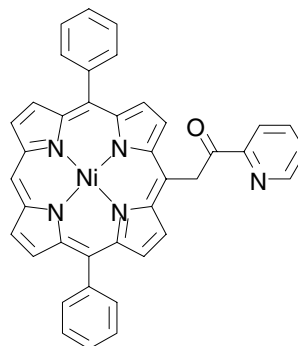
Note

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One-pot synthesis of nickel porphyrins with 2-pyridine-acetyl substituents: the unexpected Sonogashira cross-coupling products

A convenient, one-step synthesis of nickel porphyrins with 2-pyridine-acetyl substituents is reported. These nickel porphyrins were synthesized by cross-coupling brominated nickel porphyrins with 2-pyridine-ethyne.



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