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Review

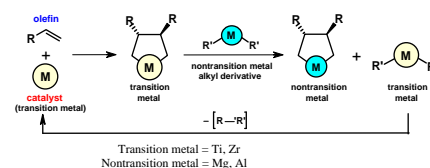
Usein M. Dzhemilev, Askhat G. Ibragimov

J. Organomet. Chem. 695 (2010) 1085

Catalytic cyclometalation reaction of unsaturated compounds in synthesis of magna- and aluminacarbocycles

The investigation results on design and application of the new catalytic cyclometalation reaction of olefins, dienes, acetylenes and allenes with Al, Mg and

halogen alkyls mediated by Ti or Zr based metallocene catalysts to produce novel classes of cyclic organometallics namely aluminacyclopropanes, aluminacyclopentenes, aluminacyclopentanes, aluminacyclopentenes, aluminacyclopenta-2,4-dienes, magnesacyclopentanes, magnesacyclopentenes, magnesacyclopenta-2,4-dienes as well as metallamacrocycles are summarized and systematized. Mechanistic aspects of catalytic cyclometalation of unsaturated compounds and chemical transformations of Al and Mg metallacycles are discussed.



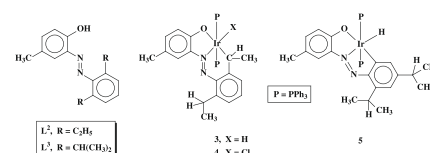
Regular Papers

Suparna Bakshi, Dipravath Kumar Seth, Haregewine Tadesse, Alexander J. Blake, Samaresh Bhattacharya

J. Organomet. Chem. 695 (2010) 1111

Interaction of 2-(2',6'-dialkylphenylazo)-4-methylphenols with iridium. C–H activation and migration of alkyl group

Reaction of 2-(2',6'-diethylphenylazo)-4-methylphenol (L^2) with $[\text{Ir}(\text{PPh}_3)_3\text{Cl}]$ afforded two organoiridium complexes **3** and **4** via C–H bond activation of an ethyl group in the arylazo fragment of the L^2 ligand. A similar reaction of $[\text{Ir}(\text{PPh}_3)_3\text{Cl}]$ with 2-(2',6'-diisopropylphenylazo)-4-methylphenol (L^3) yielded another organoiridium complex **5**, where migration of one isopropyl group from its original location (say, the 2' position) to the corresponding third position (say, the 4' position) took place through C–C bond activation.

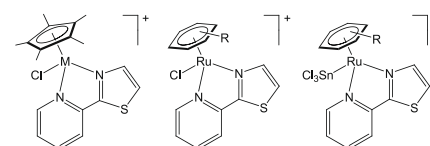


Michaël Gras, Bruno Therrien, Georg Süss-Fink, Angela Casini, Fabio Edfade, Paul J. Dyson

J. Organomet. Chem. 695 (2010) 1119

Anticancer activity of new organoruthenium, rhodium and iridium complexes containing the 2-(pyridine-2-yl)thiazole *N,N*-chelating ligand

New half-sandwich complexes of ruthenium, rhodium and iridium containing the 2-(pyridine-2-yl)thiazole *N,N*-chelating ligand display, despite strong interactions with DNA, only modest cytotoxicity towards human ovarian cancer cells.

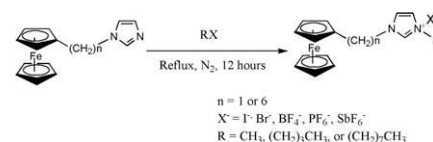


Vincent O. Nyamori, Mhleli Gumede, Muhammad D. Bala

J. Organomet. Chem. 695 (2010) 1126

Synthesis, characterisation and properties of ferrocenylalkylimidazolium salts

New ferrocenylalkylimidazolium salts were synthesised and their physical and electronic properties studied. The results on variation of cation size and type of anions had direct effect on their properties.

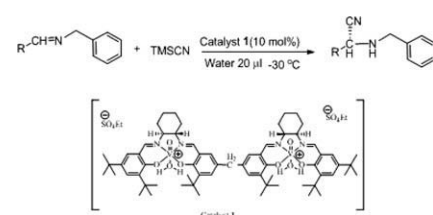


Noor-ul H. Khan, S. Saravanan, Rukhsana I. Kureshy, Sayed H.R. Abdi, Arghya Sadhukhan, Hari C. Bajaj

J. Organomet. Chem. 695 (2010) 1133

Asymmetric addition of trimethylsilylcyanide to *N*-benzylimines catalyzed by recyclable chiral dimeric V(V) salen complex

Chiral dimeric vanadium (V) salen complex was used for the asymmetric addition of trimethylsilylcyanide (TMSCN) to *N*-benzylimines. Excellent yield (92%) of α -aminonitrile and high chiral induction was achieved (ee up to 94%).

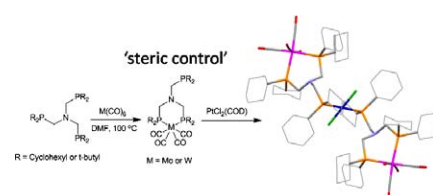


Philip W. Miller, Andrew J.P. White

J. Organomet. Chem. 695 (2010) 1138

The preparation of multimetallic complexes using sterically bulky *N*-centred tripodal dialkyl phosphino ligands

The new triphosphine ligand, $\text{N}(\text{CH}_2\text{PCy}_2)_3$, preferentially forms bidentate group 6 metal tetracarbonyl complexes owing to its steric bulk at the metal centre. This 'steric control' at the metal centre, which results one uncoordinated phosphorus arm, has been exploited for the preparation of a series of bi and trimetallic complexes.

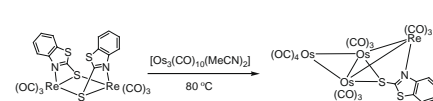


Shishir Ghosh, Kamrun N. Khanam, Md. Kamal Hossain, G.M. Golzar Hossain, Daniel T. Haworth, Sergey V. Lindeman, Graeme Hogarth, Shariff E. Kabir

J. Organomet. Chem. 695 (2010) 1146

Mixed-metal cluster synthesis: $[\text{Re}(\text{CO})_3(\mu\text{-S}_2\text{NC}_7\text{H}_4)]_2$ as a precursor for tri- and tetranuclear 2-mercaptobenzothiolato capped clusters

A series of mixed Re-M (M = Fe, Ru, Os) clusters have been synthesized from the reactions between 2-mercaptobenzothiolato dirhenium complex $[\text{Re}_2(\text{CO})_6(\mu\text{-S}_2\text{NC}_7\text{H}_4)_2]$ and $[\text{M}_3(\text{CO})_{12-x}(\text{NCMe})_x]$ ($x = 0, 2$). The reactivity of the mixed Os-Re cluster with PPh_3 is also reported.

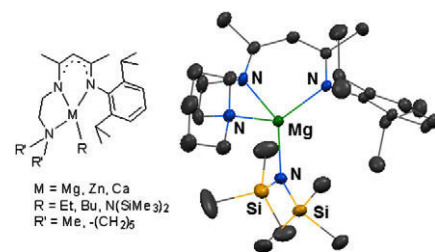


Xin Xu, Yaofeng Chen, Gang Zou, Zhi Ma, Guangyu Li

J. Organomet. Chem. 695 (2010) 1155

Magnesium, zinc, and calcium complexes based on tridentate nitrogen ligands: Syntheses, structures, and catalytic activities to the ring opening polymerization of *rac*-lactide

A series of magnesium, zinc, and calcium monoalkyl or monoamide complexes containing tridentate nitrogen ligands, $\text{CH}_3\text{C}(\text{2,6-}(\text{Pr})_2\text{C}_6\text{H}_3\text{N})\text{CHC}(\text{CH}_3)(\text{NCH}_2\text{-CH}_2\text{-D})$ ($\text{D} = \text{NMe}_2, \text{N}((\text{CH}_2\text{CH}_2)_2\text{CH}_2)$), have been synthesized, and six of which were characterized by single-crystal X-ray diffraction. The X-ray diffraction results show that the metal complexes are all solvent-free monomers and the pendant arm D bonds to the metal ion. These metal complexes are highly active for the ring-opening polymerization of *rac*-lactide and give preference for heterotactic polylactide.

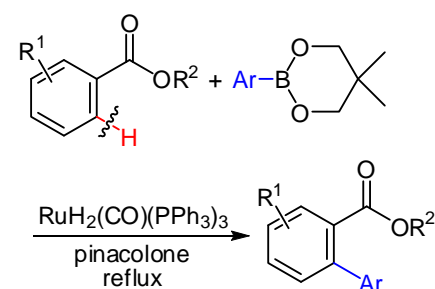


Kentaroh Kitazawa, Masashi Kotani, Takuya Kochi, Michael Langeloth, Fumitoshi Kakiuchi

J. Organomet. Chem. 695 (2010) 1163

$\text{RuH}_2(\text{CO})(\text{PPh}_3)_3$ -catalyzed arylation of aromatic esters using arylboronates via C–H bond cleavages

$\text{RuH}_2(\text{CO})(\text{PPh}_3)_3$ -catalyzed coupling reaction of aromatic esters with arylboronates performed under pinacolone refluxing conditions provided ortho arylated aromatic esters in high yields. Several aromatic esters and arylboronates can be used in this cross-coupling reaction.

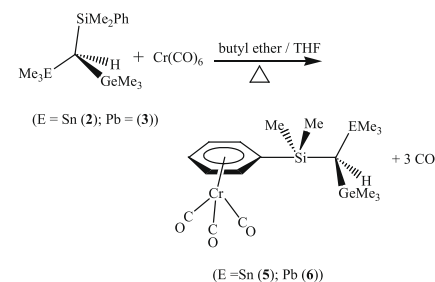


Hemant K. Sharma, Francisco Cervantes-Lee, Keith H. Pannell

J. Organomet. Chem. 695 (2010) 1168

Arenechromiumtricarbonyl complexes of silyl(germyl)(stannyl)- and silyl(germyl)-(plumbyl)methanes including the unexpected formation of arenechromium tricarbornyldimethylsilanol, $(\eta^6\text{-C}_6\text{H}_5)\text{Cr}(\text{CO})_3\text{SiMe}_2\text{OH}$

The thermal reaction of $\text{PhMe}_2\text{Si}(\text{Me}_3\text{Ge})\text{CH}_2$ (**1**) and $\text{PhMe}_2\text{Si}(\text{Me}_3\text{Ge})(\text{EMe}_3)\text{CH}$, $\text{E} = \text{Sn}$ (**2**), Pb (**3**) with $\text{Cr}(\text{CO})_6$ in di-*n*-butylether/THF mixture at 140 °C yield the corresponding arene $\text{Cr}(\text{CO})_3$ analogs, $\{(\eta^6\text{-C}_6\text{H}_5)\text{Cr}(\text{CO})_3\}\text{Me}_2\text{Si}(\text{Me}_3\text{Ge})\text{CH}_2$ (**4**) and $\{(\eta^6\text{-C}_6\text{H}_5)\text{Cr}(\text{CO})_3\}\text{Me}_2\text{Si}(\text{Me}_3\text{Ge})(\text{EMe}_3)\text{CH}$, $\text{E} = \text{Sn}$ (**5**), Pb (**6**).

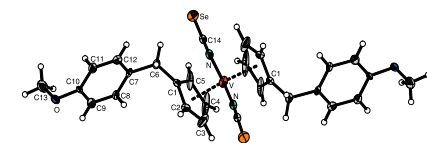


Iduna Fichtner, James Claffey, Anthony Deally, Brendan Gleeson, Megan Hogan, Maria Rivera Markelova, Helge Müller-Bunz, Holger Weber, Matthias Tacke

J. Organomet. Chem. 695 (2010) 1175

Antitumor activity of vanadocene Y and its selenocyanate derivative in xenografted caki-1 tumors in mice

Two benzyl-substituted vanadocene complexes were synthesised and tested for their anti-tumoral and anti-angiogenic activity in vitro followed by a xenograft human renal tumor in vivo in immune-deficient mice.

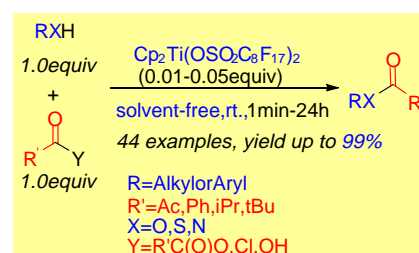


**Renhua Qiu, Guoping Zhang,
Xiaofang Ren, Xinhua Xu, Ronghua Yang,
Shenglian Luo, Shuangfeng Yin**

J. Organomet. Chem. 695 (2010) 1182

Air-stable titanocene bis(perfluorooctanesulfonate) as a new catalyst for acylation of alcohols, phenols, thiols, and amines under solvent-free condition

An air-stable titanocene bis(perfluorooctanesulfonate) of high Lewis acidity was synthesized and examined as a catalyst for acylation reactions. It shows high catalytic activity and selectivity towards the acylation of various alcohols, phenols, thiols, and amines under mild solvent-free reaction conditions. Moreover, it has good stability and can be reused without loss of activity in a test of ten cycles.

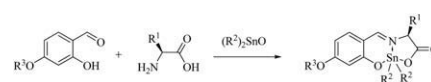


**Nikoloz Kobakhidze, Norberto Farfán,
Margarita Romero, J. Manuel Méndez-
Stivalet, M. Gabriela Ballinas-López,
Héctor García-Ortega, Oscar Domínguez,
Rosa Santillan, Francisco Sánchez-Bartéz,
Isabel Gracia-Mora**

J. Organomet. Chem. 695 (2010) 1189

New pentacoordinated Schiff-base diorganotin(IV) complexes derived from nonpolar side chain α -amino acids

Synthesis and spectroscopic characterization of twenty new pentacoordinated diorganotin(IV) compound. These compounds have been prepared in good yields by multicomponent reactions (MCRs).

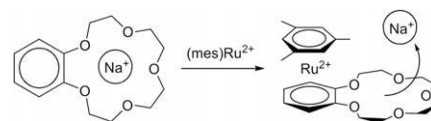


**Dmitry S. Perekalin, Maria V. Babak,
Valentin V. Novikov, Konstantin
A. Lyssenko, Maddalena Corsini,
Piero Zanello, Alexander R. Kudinov**

J. Organomet. Chem. 695 (2010) 1200

(Mesitylene)ruthenium π -complexes with benzo-15-crown-5 and dibenzo-18-crown-6

Reactions of benzocrown ethers with the cationic [(mes)Ru]²⁺ fragment afford mono and binuclear π -complexes. Ruthenium complexation strongly decreases Na⁺ binding ability of the crown ether cavity.

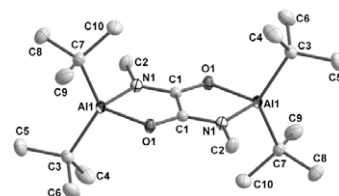


**Wanda Ziemkowska,
Jakub Kochanowski, Michał K. Cyrański**

J. Organomet. Chem. 695 (2010) 1205

Synthesis, structures and ϵ -caprolactone polymerization activity of aluminum N,N' -dimethyloxalamidates

Alkyl aluminum N,N' -dimethyloxalamidates $\text{R}_4\text{Al}_2(\text{dmoa})$ (**1**, R = Me; **2**, R = Et; **3**, R = *i*Bu; **4**, R = *t*Bu) ($\text{dmoa-H}_2 = N,N'$ -dimethyloxalamide) have been prepared and characterized. Compounds **1-4** have been studied as initiators in a process of ring opening polymerization (ROP) of ϵ -caprolactone.

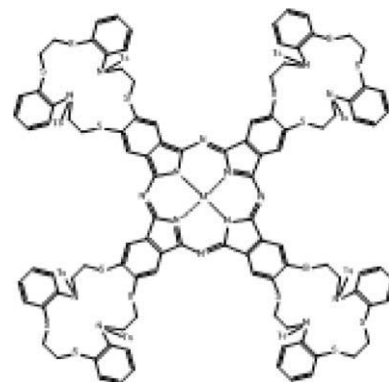


Halit Kantekin, Gülsev Dilber, Asiye Nas*J. Organomet. Chem.* 695 (2010) 1210

Microwave-assisted synthesis and characterization of a new soluble metal-free and metallophthalocyanines peripherally fused to four 18-membered tetrathiadiazacyclo-octadecene-18,19-dicarbonitrile (**5**) in 2-(dimethylamino)ethanol. The metallophthalocyanines (**7–10**) were prepared by the reaction of the phthalonitrile compound (**5**) with NiCl₂, Zn(CH₃COO)₂, CoCl₂, CuCl salts, respectively, by microwave irradiation in 2-(dimethylamino)ethanol for at 175 °C, 350 W. The new compounds were characterized by IR, ¹H NMR, ¹³C NMR, UV-Vis, elemental analysis and MS spectra data.

Preparation of some novel symmetrically tetrasubstituted metal-free phthalocyanine (**6**) and metallophthalocyanines (**7–10**) containing four 18-membered tetrathiadiazacyclo-octadecene moieties on peripheral positions has been achieved by cyclotramerization reaction of

phthalonitrile derivative (**5**) in a multi-step reaction sequence. Metal-free phthalocyanine (**6**) was synthesized by microwave irradiation of 13,24-bis[(4-methylphenyl)sulfonyl]-6,7,14,15,23,24-hexahydro-13*H*,22*H*-tribenzo[*b,h,n*][1,4,10,13,7,16]tetrathiadiazacyclo-octadecene-18,19-dicarbonitrile (**5**) in 2-(dimethylamino)ethanol. The metallophthalocyanines (**7–10**) were prepared by the reaction of the phthalonitrile compound (**5**) with NiCl₂, Zn(CH₃COO)₂, CoCl₂, CuCl salts, respectively, by microwave irradiation in 2-(dimethylamino)ethanol for at 175 °C, 350 W. The new compounds were characterized by IR, ¹H NMR, ¹³C NMR, UV-Vis, elemental analysis and MS spectra data.



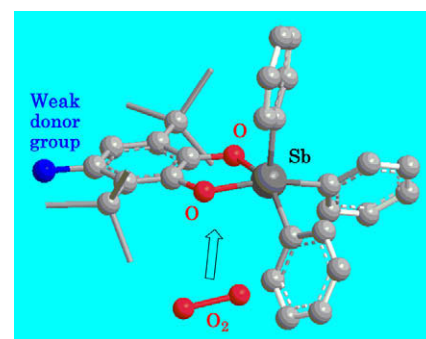
Andrey I. Poddel'sky, Ivan V. Smolyaninov, Yuri A. Kurskii, Georgy K. Fukin, Nadezhda T. Berberova, Vladimir K. Cherkasov, Gleb A. Abakumov

J. Organomet. Chem. 695 (2010) 1215

New morpholine- and piperazine-functionalized triphenylantimony(V) catecholates: The spectroscopic and electrochemical studies

New functionalized amine-containing catecholates of triphenylantimony(V) Ph₃Sb[4-O-(CH₂CH₂)₂N-3,6-DBCat] (**1**), Ph₃Sb[4-PhN-

(CH₂CH₂)₂N-3,6-DBCat] (**2**), Ph₃Sb[4-Ph₂CHN-(CH₂CH₂)₂N-3,6-DBCat] (**3**), Ph₃Sb[4,5-Piperaz-3,6-DBCat] (**4**) and binuclear bis-catecholate Ph₃Sb[3,6-DBCat-4-N(CH₂CH₂)₂N-4-3,6-DBCat][SbPh₃] (**5**) were synthesized and characterized by IR-, ¹H and ¹³C NMR spectroscopy and cyclic voltammometry. Molecular structure of **4**·CH₃OH was determined by X-ray crystallography to be a distorted tetragonal-pyramidal. According to ¹H NMR spectroscopy and CVA, complexes are active in reaction with dioxygen leading to the formation of spiroendoperoxides of 1,2,4,3-trioxastibolane type in yield of 25–37% (NMR data).

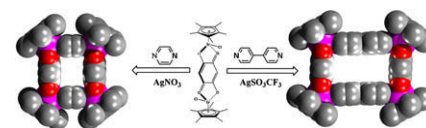


Guo-Liang Wang, Yue-jian Lin, Guo-Xin Jin

J. Organomet. Chem. 695 (2010) 1225

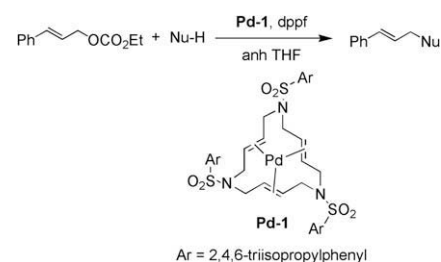
Syntheses and molecular structures of half-sandwich iridium metallarectangles containing bridging 2,5-dihydroxy-1,4-benzoquinonato (dhbq) ligands

The tetranuclear metallarectangular complexes [(Cp*Ir)₄(dhbq)₂(pyrazine)₂](NO₃)₄·CH₂Cl₂·5H₂O (**2**) and [(Cp*Ir)₄(dhbq)₂(4,4'-bipyridine)₂](SO₃CF₃)₄ (**3**) were obtained from the precursor complex (Cp*IrCl)₂(dhbq) (**1**) in the presence of AgX (X = NO₃⁻, SO₃CF₃⁻), respectively.

**Anna Serra-Muns, Roser Pleixats***J. Organomet. Chem.* 695 (2010) 1231

Tsuji-Trost allylations with palladium recovery by phosphines/Pd(0)-triolefinic macrocyclic catalysts

Allylation of nitrogen and oxygen based nucleophiles is performed with the pre-catalytic system **Pd-1**/dppf, the metal being recovered in the form of initial complex.

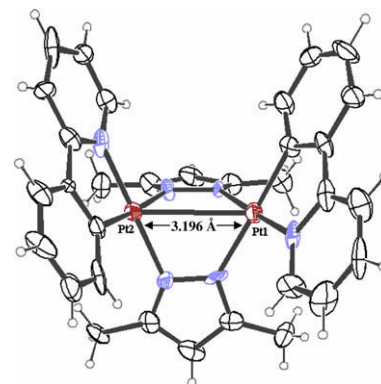


**Ninad Ghavale, Amey Wadawale,
Sandip Dey, Vimal K. Jain**

J. Organomet. Chem. 695 (2010) 1237

Synthesis, structures and spectroscopic properties of platinum complexes containing orthometalated 2-phenylpyridine

Reaction of chloro-bridged dimeric precursor $[\text{Pt}_2(\mu\text{-Cl})_2(\text{ppy})_2]$ with various anionic one-, two- and three-atom ancillary ligands, having O/N/S donors, yielded mono- and bi-nuclear platinum complexes which were characterized by UV-Vis, NMR spectroscopy and single crystal X-ray diffraction.

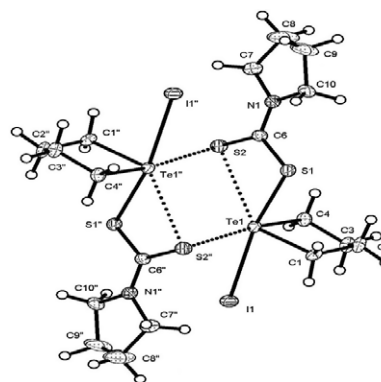


Ave María Coteró-Villegas, Patricia García y García, Herbert Höpfel-Bachner, María del Carmen Pérez-Redondo, Patricia Martínez-Salas, Marcela López-Cardoso, Raymundo Cea Olivares

J. Organomet. Chem. 695 (2010) 1246

Synthesis and spectroscopic characterization of six new monosubstituted dithiocarbamate compounds containing organotellurium(IV) heterocycles: Single-crystal structures of $\text{C}_5\text{H}_{10}\text{Te}[\text{S}_2\text{CN}(\text{CH}_2\text{CH}_3)_2]$, $\text{C}_4\text{H}_8\text{Te}[\text{S}_2\text{CN}(\text{CH}_2\text{CH}_2)_2]$, $\text{C}_4\text{H}_8\text{OTe}[\text{S}_2\text{CN}(\text{CH}_2\text{CH}_2)_2]$ and $\text{C}_5\text{H}_{10}\text{-Te}[\text{S}_2\text{CN}(\text{CH}_2\text{CH}_2)_2]$

Six new monosubstituted organotellurium(IV) with dithiocarbamates have been synthesized and characterized. The molecular structures of four compounds were determined by X-ray analyses. All compounds are dimeric associations connected through Te...S secondary bonds; however **2** show an additional secondary bond resulting in the formation of a self-assembled chain.



Note

**Sen-ichi Aizawa, Tatsuya Kawamoto,
Yuuto Asai, Chie Ishimura**

J. Organomet. Chem. 695 (2010) 1253

Stepwise phosphine sulfide formation and metal-bridging reaction of tetradentate and tridentate phosphine ligands on palladium(II)

Kinetic studies revealed that the phosphine sulfide formation reactions of the Pd(II) complexes with tripodal tetradentate phosphine proceed via the intermediate with a pendant dissociated phosphino group. The steric conversion mechanism of the phosphine-bridging reaction onto Pt(II) for the tetradentate phosphine was compared with that for the linear tridentate one.

