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Journal of Organometallic Chemistry

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Contents

Special Issue: 2002 Main Group Chemistry Award Symposium / Frontiers in Organometallic Chemistry

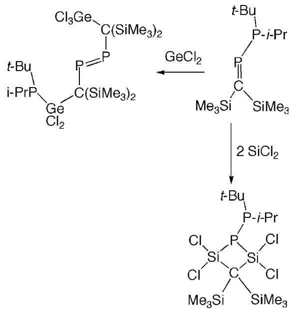
Regular papers

Wolf-Walther du Mont, Thorsten Gust, Emma Seppälä, Cathleen Wismach

J. Organomet. Chem. 689 (2004) 1331

Dichlorosilylene and dichlorogermylene transfer to alkylidenephosphanes

$SiCl_2$ transfer from $Me_3GeSiCl_3$ to alkylidene phosphanes is compared with related reactions of $GeCl_2$.

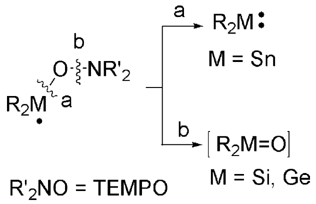


Takeaki Iwamoto, Hidenori Masuda, Shintaro Ishida, Chizuko Kabuto, Mitsuo Kira

J. Organomet. Chem. 689 (2004) 1337

Diverse reactions of nitroxide-radical adducts of silylene, germylene, and stannylene

Fate of aminoxy-substituted group-14 element radicals appeared in the addition reactions of stable group-14 element divalent compounds (R_2M:, M = Si, Ge, and Sn) with TEMPO was found to be remarkably dependent on the central metal. The reason is discussed on the basis of the DFT calculations for model reactions.

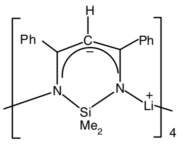


Peter B. Hitchcock, Michael F. Lappert, Xue-Hong Wei

J. Organomet. Chem. 689 (2004) 1342

Synthesis and structures of four crystalline lithium β-diketiminates derived from $[Li\{CH(SiMe_3)(SiMe_2OMe)\}]_8$ and PhCN or Bu^tCN and PhCN

Four crystalline lithium complexes have been prepared from the title lithium silylmethyl and nitriles, each containing N,N'-Me_2 Si-bridged, β-diketiminato ligands $[N\overline{SiMe_2C(R)C(X)C(Ph)}N]^-$ (R = Bu^t or Ph); two have a central exocyclic C–H (X = H) (**1**, **3**) bond while **2** and **2′** have instead a C–$SiMe_3$ (X = $SiMe_3$) bond. Whereas **1** and **3** are π-delocalised, the central C(X) bond of **2** and **2′** has significant carbanionic character.



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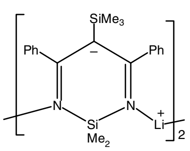

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doi:10.1016/S0022-328X(04)00166-4

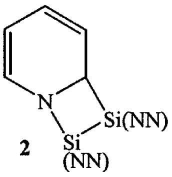
Note

Barbara Gehrhus, Peter B. Hitchcock

J. Organomet. Chem. 689 (2004) 1350

The thermally stable silylene $Si[(NCH_2Bu^t)_2\text{-}C_6H_4\text{-}1,2]$: reaction with pyridine and quinoline

The silylene $Si[(NCH_2Bu^t)_2C_6H_4\text{-}1,2]$ **1** was shown to add to the C=N bond of pyridine to give the heterocycle **2**, which is labile and converts to the 2-pyridyldisilane **3**. The benzoannulated analogue of **2** was obtained using quinoline, which is thermally stable.



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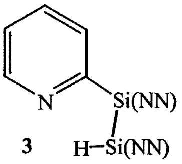

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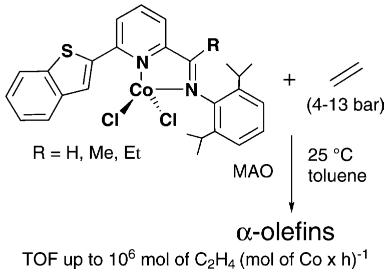
Regular papers

Claudio Bianchini, Giuliano Giambastiani, Giuseppe Mantovani, Andrea Meli, David Mimeau

J. Organomet. Chem. 689 (2004) 1356

Oligomerisation of ethylene to linear α-olefins by tetrahedral cobalt(II) precursors stabilised by benzo[*b*]thiophen-2-yl-substituted (imino)pyridine ligands

Tetrahedral cobalt(II) complexes of new benzo[*b*]thiophen-2-yl-substituted (imino)-pyridine ligands, on activation with MAO, are active and selective for the oligomerisation of ethylene to α-olefins.

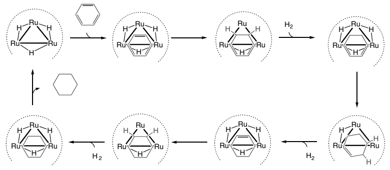


Georg Süss-Fink, Bruno Therrien, Ludovic Vieille-Petit, Mathieu Tschan, Vladimir B. Romakh, Thomas R. Ward, Massoud Dadras, Gabor Laurenczy

J. Organomet. Chem. 689 (2004) 1362

Supramolecular cluster catalysis: facts and problems

The hydrogenation of benzene to give cyclohexane, catalysed under biphasic conditions by the water-soluble cluster cation $[H_3Ru_3(C_6H_6)(C_6Me_6)_2(O)]^+$ (tetrafluoroborate salt), is believed to occur within the hydrophobic pocket spanned by the arene ligands of the cluster, the intermediates being supramolecular host–guest complexes.

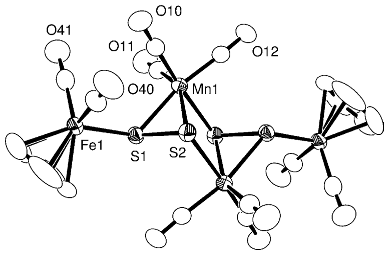


Richard D. Adams, Burjor Captain, O-Sung Kwon, Perry J. Pellechia, Sanghamitra Sanyal

J. Organomet. Chem. 689 (2004) 1370

Synthesis and properties of oligomers of iron–manganese carbonyl complexes with bridging disulfido ligands

The new dimeric mixed metal disulfido complexes: $[CpFeMn(CO)_5(\mu_3\text{-}S_2)]_2$, **2** and $[Cp^*FeMn(CO)_5(\mu_3\text{-}S_2)]_2$, **3** were prepared and structurally characterized. Compounds **2** and **3** both contain two triply bridging disulfido ligands. At 40 °C, compound **2** is transformed into a trimer, $Cp_3Fe_3Mn_3\text{-}(CO)_{15}(\mu_3\text{-}S_2)(\mu_4\text{-}S_2)_2$, **4** having three bridging disulfido ligands. Compound **4** exhibits a dynamical intramolecular exchange process that interconverts two of the three CpFe-$(CO)_2$ groups on the NMR timescale.

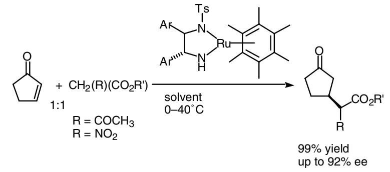


Takao Ikariya, Hui Wang,
Masahito Watanabe, Kunihiko Murata

J. Organomet. Chem. 689 (2004) 1377

Asymmetric Michael reactions of α-substituted acetates with cyclic enones catalyzed by multifunctional chiral Ru amido complexes

Well-defined 16-electron chiral ruthenium amido complexes, Ru[(*R*,*R*)-diamine](η^6-arene), efficiently catalyze asymmetric Michael additions of Michael donors to cyclic enones to give adducts in high yields and with excellent ee's. β-Ketoesters or nitroacetate as Michael donors react with 2-cyclopentenone in toluene or *t*-butyl alcohol containing the Ru amido catalyst (S/C = 50) to afford the Michael adduct in 99% yield and with up to 92% ee. The outcome of the reaction was delicately influenced by the structures of the diamine and arene ligands as well as reaction conditions.

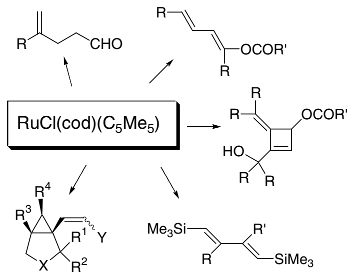


Sylvie Dérien, Pierre H. Dixneuf

J. Organomet. Chem. 689 (2004) 1382

The versatility of molecular ruthenium catalyst $RuCl(COD)(C_5Me_5)$

The complex $RuCl(COD)(C_5Me_5)$ is a good catalyst precursor for the selective transformation of alkynes to generate high value chemicals with atom economy reactions. Its versatility has been shown by different ruthenium activation processes involving alkynes: cross-oxidative coupling, coupling via a cyclobutadienyl–ruthenium complex or via a mixed Fischer–Schrock type biscarbene–ruthenium complex or coupling via carbene–ruthenium species.

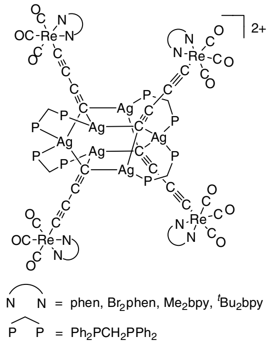


Vivian Wing-Wah Yam

J. Organomet. Chem. 689 (2004) 1393

Luminescent metal alkynyls – from simple molecules to molecular rods and materials

This review describes the design and synthesis of a number of luminescent transition metal alkynyls by this laboratory. The luminescence properties of the complexes have been studied and their emission origin elucidated. Some of these complexes have been shown to be ideal building blocks for the design and construction of luminescent molecular rods and materials, in which the luminescence properties can be readily tuned by changing the alkynyl ligands. Some of them also exhibited luminescence switching behaviour with the "ON–OFF" luminescence states modulated by redox processes, metal ion-binding or solvent composition.

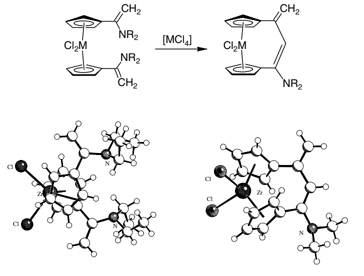


Gerhard Erker, Gerald Kehr,
Roland Fröhlich

J. Organomet. Chem. 689 (2004) 1402

Developing some functional group chemistry at the Group 4 bent metallocene frameworks

Several types of reactions are described that lead to functionalized Group 4 metallocene complexes, including olefin metathesis reactions, photochemical [2+2] cycloadditions, an intramolecular *Mannich*-type reaction, and borylation reactions at the metallocene Cp-ligands using the very electrophilic boranes $B(C_6F_5)_3$ or $HB(C_6F_5)_2$, respectively.

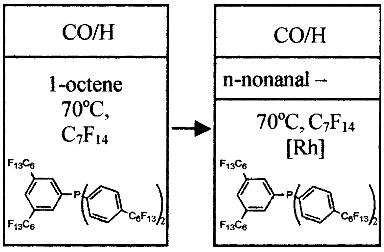


Dave J. Adams, David J. Cole-Hamilton, Eric G. Hope, Peter J. Pogorzelec, Alison M. Stuart

J. Organomet. Chem. 689 (2004) 1413

Hydroformylation in fluorous solvents

The hydroformylation of long chain alkenes under fluorous biphase conditions and in neat perfluorocarbon solvents is reviewed, with emphasis on the steric and electronic influence of perfluoroalkylation on catalyst activity, regioselectivity and retention in the fluorocarbon phase.

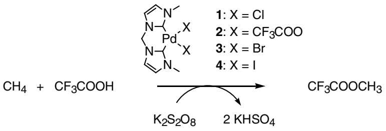


Thomas Strassner, Michael Muehlhofer, Alexander Zeller, Eberhardt Herdtweck, Wolfgang A. Herrmann

J. Organomet. Chem. 689 (2004) 1418

The counterion influence on the CH-activation of methane by palladium(II) biscarbene complexes – structures, reactivity and DFT calculations

Palladium(II) biscarbene complexes with different counterions have shown to be active in the CH-activation of methane. A systematic study on the correlation between the counterion (I^-, Br^-, Cl^-, CF_3COO^-) and the catalytic activity was conducted. DFT calculations are used to estimate the bond strength and stability of the complexes. The results of single-crystal X-ray structure determinations for the bischloride and bistrifluoroacetate complexes are reported.

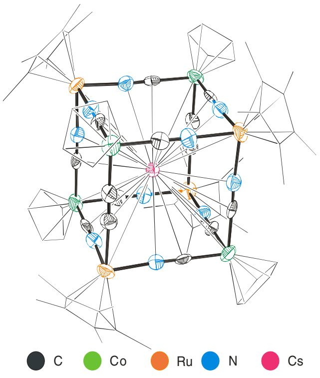


Maya Ramesh, Thomas B. Rauchfuss

J. Organomet. Chem. 689 (2004) 1425

Structural and mechanistic studies on ion insertion into the molecular box {$[CpCo(CN)_3]_4[Cp^*Ru]_4$}

The molecular box $[CpCo(CN)_3]_4[Cp^*Ru]_4$ (Co_4Ru_4) reacts readily with a variety of monocations to form $M{\subset}Co_4Ru_4^+$ ($M = K^+, Cs^+, Rb^+$).

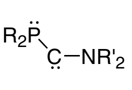


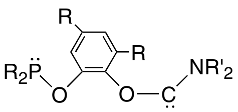
Nathalie Merceron-Saffon, Heinz Gornitzka, Antoine Baceiredo, Guy Bertrand

J. Organomet. Chem. 689 (2004) 1431

α, β-(Phosphino)(aminocarbene) and α, ω-(phosphino)(oxyaminocarbene): new bidentate ligands for transition metal complexes

Two original rhodium(I) complexes were obtained by treatment of $[Rh(CO)_2Cl]_2$ with (amino)(phosphino)carbene **1a**, a 1,2-bidentate ligand, and (amino)(oxy)carbene **1b** a 1,6-bidentate ligand.


1a


1b