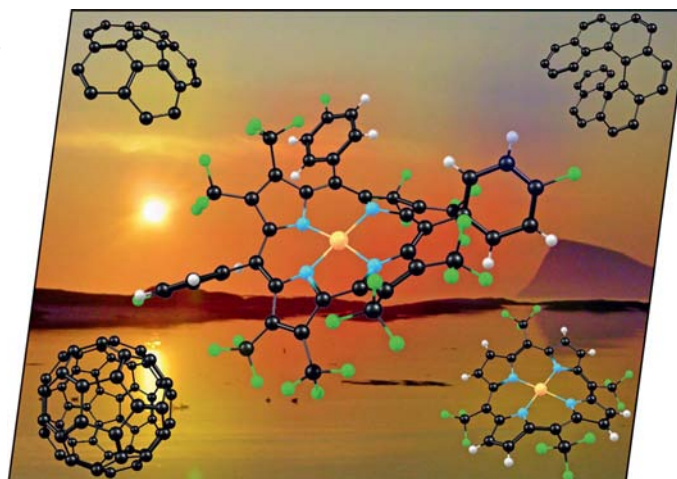


EurJIC is a journal of ChemPubSoc Europe, a union of 16 European chemical societies formed for the purpose of publishing high-quality science. All owners merged their national journals to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*.

Other ChemPubSoc Europe journals are *Chemistry – A European Journal*, *ChemBioChem*, *ChemPhysChem*, *ChemMedChem*, *ChemSusChem* and *ChemCatChem*.

COVER PICTURE

The cover picture shows a variety of nonplanar aromatics, including corannulene, fullerenes, helicenes and nonplanar porphyrins against a background of the midnight sun near Tromsø, Norway. The molecule at the center is a new member of this intriguing family of compounds – an exceedingly strongly saddled, chiral copper corrole. These have been synthesized by Prof. A. Ghosh and co-workers at the University of Tromsø; details are discussed in the Short Communication on p. 1865ff.



SHORT COMMUNICATIONS

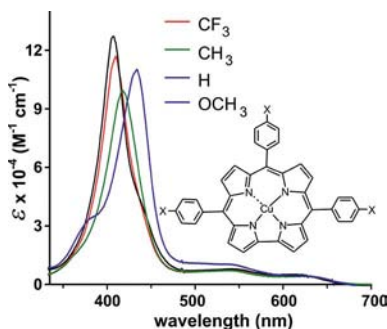
Metalloporphyrins

A. Alemayehu, J. Conradie,*
A. Ghosh* 1857–1864



A First TDDFT Study of Metalloporphyrin Electronic Spectra: Copper *meso*-Triarylporphyrins Exhibit *Hyper* Spectra

Keywords: Corroles / Density functional calculations / Substituent effects / Copper / Silver



The Soret maxima of copper triarylcorroles, in contrast to silver triarylcorroles, are exquisitely sensitive to substitutions on the *meso* phenyl groups. Electrochemical data suggest that the difference in substituent effects between the Cu and Ag cases appears to be related to a high-energy LUMO and a much larger HOMO–LUMO gap in the silver case.

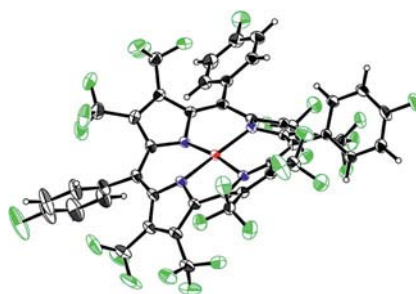
Nonplanar Aromatics

K. E. Thomas, J. Conradie, L. K. Hansen,
A. Ghosh* 1865–1870



A Metalloporphyrin with Orthogonal Pyrrole Rings

Keywords: Aromaticity / Chirality / Corroles / Trifluoromethylated compounds



The X-ray structure of a copper β-octakis(trifluoromethyl)-*meso*-triarylcorrole reveals a super-warped, chiral core with essentially orthogonal pyrrole rings.

FULL PAPERS

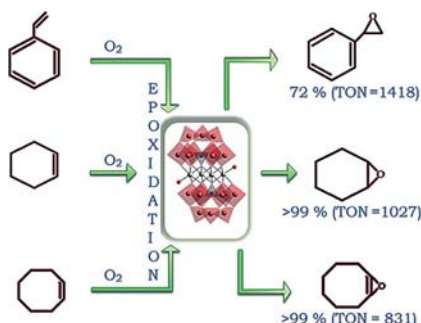
Aerobic Epoxidation

K. Patel, B. K. Tripuramallu,
A. Patel* 1871–1875



A Manganese(II) Sandwich-Type Phosphotungstate Complex – Synthesis, Structural Characterization and Catalytic Activity towards Liquid-Phase Aerobic Epoxidation of Alkenes

Keywords: Manganese / Tungsten / Sandwich complexes / Epoxidation / Heterogeneous catalysis / Phosphotungstate



A one-pot route for the synthesis of the cesium salt of a tetranuclear rhomb-like manganese substituted Keggin-type sandwich phosphotungstate complex is presented along with the characterization of the complex. This sandwich complex has been used as an efficient, selective heterogeneous catalyst for aerobic epoxidation of alkenes under mild solvent-free reaction conditions with high a TON.

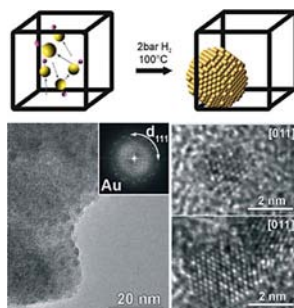
Metal-Organic Frameworks

M. Müller, S. Turner, O. I. Lebedev,
Y. Wang, G. van Tendeloo,
R. A. Fischer* 1876–1887



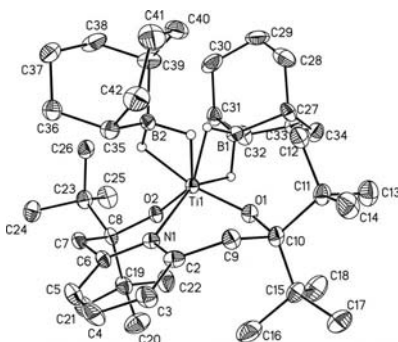
Au@MOF-5 and Au/MO_x@MOF-5 (M = Zn, Ti; x = 1, 2): Preparation and Microstructural Characterisation

Keywords: Metal-organic frameworks / Host-guest systems / Nanoparticles / Catalysts / Gold



Doubly loaded MOF-5 composite materials Au/ZnO@MOF-5 and Au/TiO₂@MOF-5 were derived by gas-phase infiltration of MOF-5. These materials were characterised by different spectroscopic and microscopic techniques and tested in oxidation reactions. It was shown that metal and oxide particles are coexistent in one MOF particle.

The reaction of $(2,6\text{-}i\text{Pr}_2\text{C}_6\text{H}_3\text{O})_3\text{TiCl}$ with $\text{M}(\text{H}_2\text{BR}_2)$ borates not only yielded the hitherto unknown phenolatotitanium dihydridodiorganylborates but also a number of byproducts such as $2,6\text{-}i\text{Pr}_2\text{C}_6\text{H}_3\text{OBR}_2$, BR_3 and H_3BTHF and more importantly the ester $\text{Ti}(\text{OC}_6\text{H}_3i\text{Pr}_2)_4$. The compounds with dicyclohexyldihydrido-9-boratocyclo-nonane substituents showed C-agostic interactions.



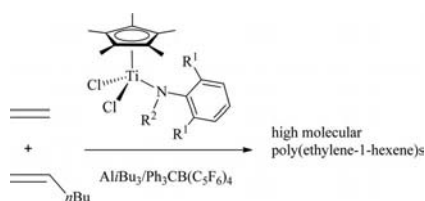
J. Knizek, H. Nöth* 1888–1900

Tris(2,6-diisopropylphenolato)titanium(IV)
Dihydridodiorganylborates: Synthesis and Structures

Keywords: Titanium / Boron / Borates / Structure elucidation / Agostic interactions

Titanocene Complexes

A number of half-sandwich titanium complexes have been synthesized, characterized, and investigated as catalysts for ethylene polymerization and copolymerization with 1-hexene

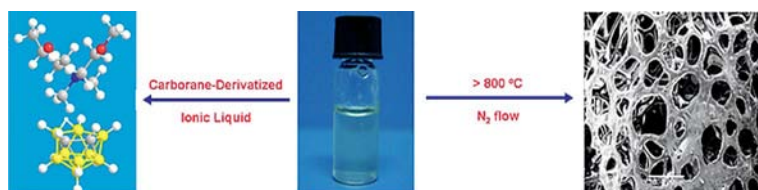


K. Liu, Q. Wu, W. Gao, Y. Mu,*
L. Ye 1901–1909

Half-Titanocene Anilide Complexes
 $\text{Cp}^*\text{TiCl}_2[\text{N}(2,6\text{-R}^1_2\text{C}_6\text{H}_3)\text{R}^2]$: Synthesis, Structures and Catalytic Properties for Ethylene Polymerization and Copolymerization with 1-Hexene

Keywords: Titanium / Metallocenes / Polymerization / Copolymerization / Polyethylene

Carborane-Derivatized Ionic Liquid



A new series of carborane-derivatized low-melting salts based on ether-functionalized cations were synthesized and their physico-chemical properties were comprehensively studied. Calcining these ionic liquids at

high temperature ($> 800\text{ }^\circ\text{C}$) gives an interesting skeleton composed of B_2O_3 and amorphous carbon with a structure of hollow and reticular shell morphology, as confirmed by TGA, XPS, XRD and SEM.

S. Liu, Z. Chen, Q. Zhang, S. Zhang,
Z. Li, F. Shi, X. Ma,
Y. Deng* 1910–1920

Carborane-Derivatized Low-Melting Salts with Ether-Functionalized Cations – Preparation and Properties

Keywords: Ionic liquids / Carboranes / Boron / Carbon / Raman spectroscopy / IR spectroscopy

Click Chelates

The picolyl-triazole ligand, prepared by click chemistry, served as a linker between the biologically-relevant *cis* platinum platform and the diazene functional group. The synthesis and characterization of the new diamminedichloroplatinum(II) compounds by spectroscopic techniques, which included single-crystal X-ray diffraction, is reported.



D. Urankar, A. Pevec,
J. Košmrlj* 1921–1929

Synthesis and Characterization of Platinum(II) Complexes with a Diazenecarboxamide-Appended Picolyl-Triazole Ligand

Keywords: Platinum / N ligands / Chelates / Click chemistry

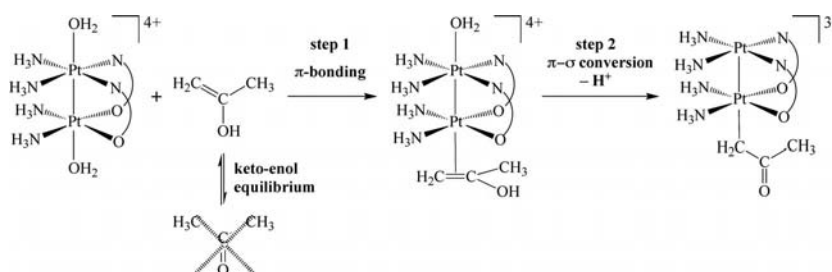
CONTENTS

Binuclear Pt Complexes

H. Fukushima, H. Mori, M. Arime,
S. Iwatsuki, K. Ishihara,*
K. Matsumoto* 1930–1936

Formation Mechanism of Head-to-Head Amidato-Bridged Acetonylplatinum(III) Binuclear Complexes – Kinetic Evidence for π -Coordination of the Enol Form of a Ketone in a Ligand Substitution Reaction

Keywords: Platinum / Reaction mechanisms / Enols



The enol form of acetone coordinates to the $\text{Pt}(\text{N}_2\text{O}_2)$ atom in the HH amidato-bridged platinum(III) binuclear complex at

first, and then the π -coordinated acetone changes to the σ -coordinated acetone to form the acetonyl Pt^{III} binuclear complex.

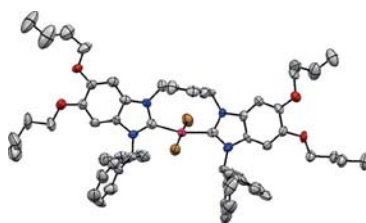
Pd-NHC Complexes

P. V. Simpson, B. W. Skelton,
D. H. Brown,* M. V. Baker* ... 1937–1952



Synthesis and Characterisation of Mono- and Bidentate Alkoxybenzimidazolin-2-ylidene Palladium Complexes: Interesting Solution Behaviour and Application in Catalysis

Keywords: Palladium / Homogeneous catalysis / *N*-Heterocyclic carbenes / Nitrogen heterocycles / Ligand effects



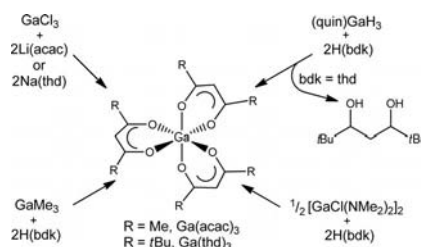
The effects of bulky substituents, electron-donating substituents, and ancillary allyl ligands, on structure and catalytic activity of mono- and bis(benzimidazolin-2-ylidene) complexes of Pd, were investigated. In the bis(NHC) systems, steric effects within the functionalised NHCs encourage formation of some unusual coordination geometries.

CVO Precursors

D. Pugh, L. G. Bloor, S. Sathasivam,
I. P. Parkin, C. J. Carmalt* 1953–1960

Gallium and Indium β -Diketonate Complexes: AACVD of $[\text{In}(\text{thd})_3]$ and the Attempted Synthesis of Gallium and Indium Bis(β -diketonates)

Keywords: Gallium / Indium / Chemical vapor deposition / Thin films



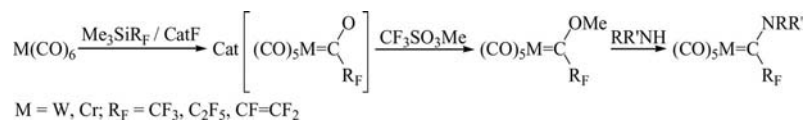
AACVD of $[\text{In}(\text{thd})_3]$ at 450 °C resulted in the formation of crystalline films of In_2O_3 . The attempted synthesis of gallium and indium bis(β -diketonate) complexes via salt, hydride, methane and amine elimination only resulted in the isolation of homoleptic gallium and indium tris(β -ketonate) complexes.

Perfluoroalkyl Fischer Carbenes

W. Tyrra, Yu. L. Yagupolskii,* N. V. Kirij,
E. B. Rusanov, S. Kremer,
D. Naumann 1961–1966

A General Route to Perfluoroalkyl- and Trifluorovinyl-Substituted Fischer Carbene Complexes of Tungsten and Chromium – Syntheses, Characterisation and Structures

Keywords: Carbene complexes / Chromium / Tungsten / Fluorinated ligands

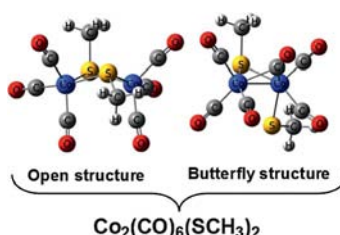


A convenient synthetic pathway to perfluoroorgano-substituted Fischer carbene complexes of tungsten and chromium by the direct addition of perfluoroalkyl (CF_3 , C_2F_5) and trifluorovinyl groups, generated

from the corresponding fluoroorgano(tri-methyl)silanes in the presence of fluoride ions to hexacarbonyltungsten and -chromium is described.

(Alkylthio)cobalt CO Complexes

Density functional calculations on the $\text{Co}_2(\text{CO})_6(\text{SR})_2$ compounds ($\text{R} = \text{CH}_3$, CF_3) predict both open and butterfly structure types of similar energies. The open structures have ca. 3.4 Co...Co distances indicating a lack of direct metal-metal bonding. The butterfly structures have direct Co–Co bonds of lengths ca. 2.5 Å forming the “body” of the butterfly.

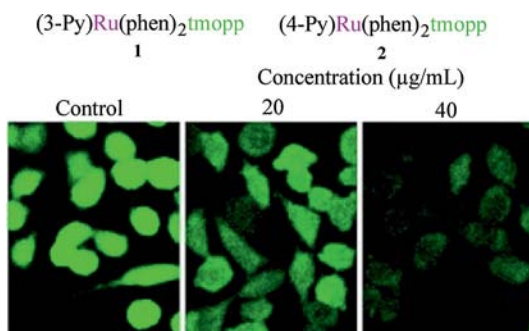


M. B. Sárosi, I. Silaghi-Dumitrescu,
R. B. King* 1967–1973

Metal–Metal Bonding in Bis(alkylthio)-hexacarbonyldicobalt Complexes: Open Structures vs. Butterfly and Tetrahedrane Structures

Keywords: Cobalt / Carbonyl ligands / Sulfur / Density functional calculations

Antitumor Agents



Two ruthenium(II)–porphyrin complexes were synthesized and characterized. Both complexes show good antioxidant activity, which correlates with their antitumor activity. The generation of reactive oxygen

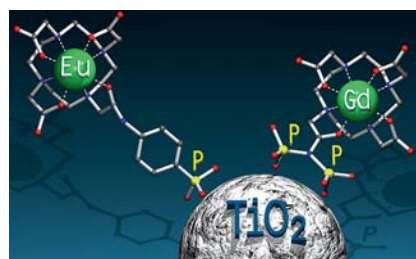
species (ROS) in HepG₂ cells treated with complex 1 decreased with increasing complex concentration. Drugs such as these could induce apoptosis in HepG₂ cells by antioxidation.

Y. Liu, X. Zhang, R. Zhang,
T. Chen, Y.-S. Wong, J. Liu,*
W.-J. Zheng* 1974–1980

Ruthenium–Porphyrin Complexes Induce Apoptosis by Inhibiting the Generation of Intracellular Reactive Oxygen Species in the Human Hepatoma Cell Line (HepG₂)

Keywords: Ruthenium / Antitumor agents / Apoptosis / Antioxidants / Radical scavengers

The first systematic study of the interaction of phosphonic acid and/or geminal bis(phosphonic acid) groups with a titanium dioxide nanocolloid reveals sorption behavior of both groups. The bis(phosphonate) forms multilayers on the surface that resist washing, whereas the phosphonate monolayer desorption rate depends on the conditions of the adsorption reaction.



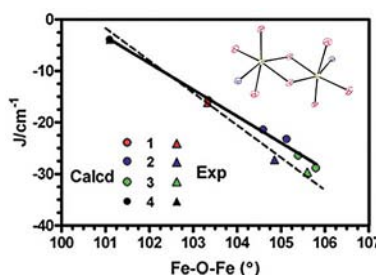
I. Řehoř, V. Kubiček,* J. Kotek,
P. Hermann, J. Száková,
I. Lukeš 1981–1989

Modification of Nanocrystalline TiO₂ with Phosphonate- and Bis(phosphonate)-Bearing Macrocyclic Complexes: Sorption and Stability Studies

Keywords: Titanium dioxide / Adsorption / Phosphonates / Surface analysis / Nanostructures

Diiron Complexes

A series of novel dinuclear μ -dialkoxo-bridged iron(III) complexes have been synthesized and their magnetic properties investigated experimentally and theoretically. A magnetostructural correlation between Fe–O–Fe angle and exchange coupling constant (J) was established.



M. M. Hänninen, E. Colacio,* A. J. Mota,
R. Sillanpää* 1990–1996

A Combined Experimental and Theoretical Study on Bis(μ -alkoxo)diiron(III) Complexes with Hydroxybenzylaminoethanol [O,N,O] Donor Ligands: Syntheses, Structures and Magnetic Properties

Keywords: Iron / Magnetic properties / DFT calculations / Structure elucidation

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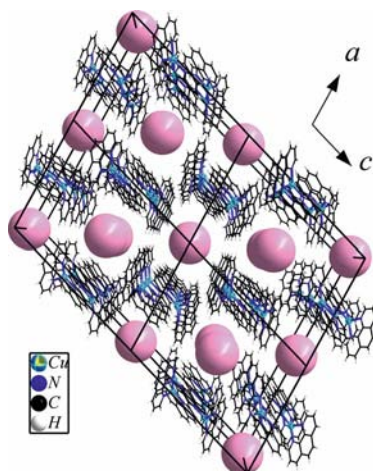
Hybrid Polyoxometallates

L.-N. Xiao, Y. Peng, Y. Wang, J.-N. Xu,
Z.-M. Gao, Y.-B. Liu, D.-F. Zheng,
X.-B. Cui,* J.-Q. Xu* 1997–2005



Four New Compounds Constructed from Bis-Antimony-Capped Keggin Polyoxoanions $\{\text{PMo}_{12}\text{Sb}_2\text{O}_{40}\}$ and Different Coordination Fragments

Keywords: Antimony / Molybdenum / Polyoxometallates / Heteropolyanions / Coordination modes / Transition metals



Four new heteropolyanions have been synthesized and characterized. Two represent the first examples of extended structures based on polyoxoanion $[\text{PMo}_{12}\text{O}_{40}\text{Sb}_2]^{2-}$ with an α -Keggin configuration and different transition-metal coordination complexes and the other two are supramolecular structures constructed from $\{\text{PMo}_{12}\text{Sb}_2\text{O}_{40}\}$ polyoxoanions and different transition-metal coordination fragments.

CORRECTION

Z. Yang, J. Wei, H. Yang, L. Liu, H. Liang,
Y. Yang* 2006

Mesoporous CeO_2 Hollow Spheres Prepared by Ostwald Ripening and Their Environmental Applications

Keywords: Hydrothermal synthesis / Template-free synthesis / Water treatment / Heterogeneous catalysis / Adsorption

* Author to whom correspondence should be addressed.



Supporting information on the WWW (see article for access details).



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