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IN THIS ISSUE

ISSN 1477-9226 CODEN DTARAF (44) 5201–5316 (2006)



Cover

See: Shuang Liu, Jiasheng Zhang, Xin Wang and Gou-Xin Jin, pp. 5225–5230.

The background is a nocturne of some traditional architecture in Shanghai. The main body includes some selected crystal structures and a dimer of $\{\text{Cp}^*\text{Ir}[\text{S}_2\text{C}_2(\text{B}_{10}\text{H}_{10})]\}_2(\mu\text{-bpo})$ which forms a butterfly-shaped figure.

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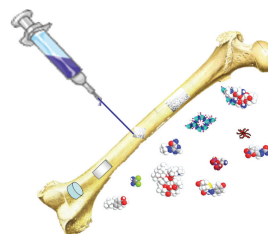
PERSPECTIVE

5211

Revisiting ceramics for medical applications

María Vallet-Regí*

Recent research in the field of bioceramics has involved new types of materials for implant fabrication, aimed at bone regeneration with the simultaneous addition of therapeutic and/or osteogenic substances.



COMMUNICATION

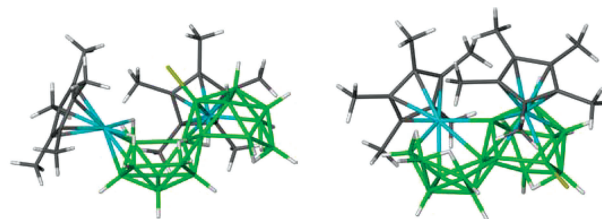
5221



Macropolyhedral boron-containing cluster chemistry. Cluster opening and B-frame rearrangement in the reaction of $\text{B}_{16}\text{H}_{20}$ with $[\{\text{IrCl}_2(\eta^5\text{-C}_5\text{Me}_5)\}_2]$. Synchrotron X-ray structures of $[(\eta^5\text{-C}_5\text{Me}_5)_2\text{Ir}_2\text{B}_{16}\text{H}_{17}\text{Cl}]$ and $[(\eta^5\text{-C}_5\text{Me}_5)_2\text{Ir}_2\text{B}_{16}\text{H}_{15}\text{Cl}]$

Michael J. Carr, Sarath D. Perera, Tomáš Jelinek, Colin A. Kilner, William Clegg, Bohumil Štíbr and John D. Kennedy

Two $\{\text{Ir}_2\text{B}_{16}\}$ 18-vertex cluster compounds made from $\text{B}_{16}\text{H}_{20}$ show unprecedented rearrangements of the starting B-frame skeleton.



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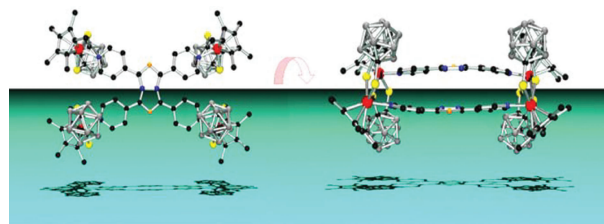
PAPERS

5225

Synthesis and characterization of binuclear half-sandwich metal (Co, Ir and Ru) complexes containing ancillary *ortho*-carborane-1,2-dithiolato ligands

Shuang Liu, Jiasheng Zhang, Xin Wang and Guo-Xin Jin*

Binuclear half-sandwich metal (Co, Ir and Ru) complexes, connected with pyridyl-based ligands, were prepared and characterized by X-ray crystallography.

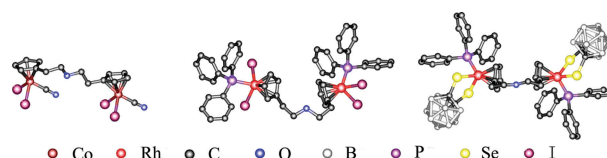


5231

Binuclear half-sandwich cobalt(III) and rhodium(III) *ortho*-carboranedichalocogenolato complexes with ether chain-bridged bis(cyclopentadienyl) ligand

Xiu-Feng Hou,* Shu Liu, Hui Wang, Yin-Qiang Chen and Guo-Xin Jin*

The binuclear half-sandwich *o*-carboranedichalocogenolato cobalt(III) and rhodium(III) complexes with ether chain-bridged bis(cyclopentadienyl) ligands have been synthesized and characterized structurally.

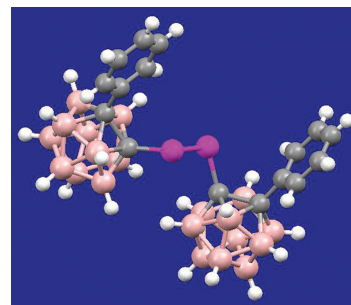


5240

Synthesis, reactivity and structural studies of selenide bridged carboranyl compounds

Anna Laromaine, Francesc Teixidor, Raikko Kivekäs, Reijo Sillanpää, Massimiliano Arca, Vito Lippolis, Eulàlia Crespo and Clara Viñas*

Dimeric *closo* *o*-carborane clusters linked through a diselenide and selenide bridge bring new information on the differences between icosahedral *closo* carboranes and any other organic groups, among others S and Se atoms were found to be positively charged.

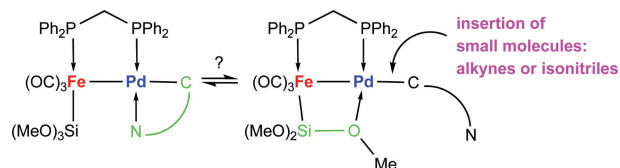


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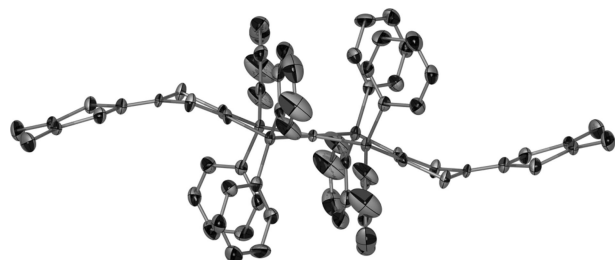
Insertion reactions of alkynes and organic isocyanides into the palladium–carbon bond of dimetallic Fe–Pd alkoxysilyl complexes

Michael Knorr,* Isabelle Jourdain, Pierre Braunstein,* Carsten Strohmann, Antonio Tiripicchio and Franco Ugozzoli

The reactivity of dppe-supported dimetallic Fe–Pd complexes containing a hemilabile bridging alkoxysilyl ligand is examined with respect to the insertion of alkynes or isocyanides into their Pd–C bond.



5259

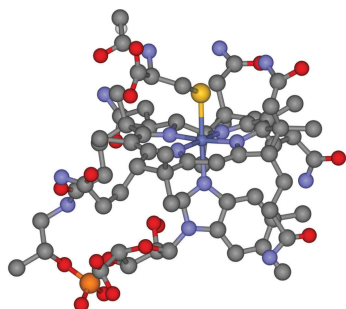


A series of complexes of the phosphorus-based TTF ligand *o*-P2 with the metal ions Fe^{II}, Co^{II}, Ni^{II}, Pd^{II}, Pt^{II}, and Ag^I

Calvin E. Uzelmeier, Bradley W. Smucker, Eric W. Reinheimer, Mikhail Shatruk, Amanda W. O'Neal, Marc Fourmigué and Kim R. Dunbar*

The synthesis and characterization of a series of metals centers coordinated by a tetrathiafulvalene phosphine ligand are discussed. The series of complexes involves metals from all three rows of the transition series.

5269

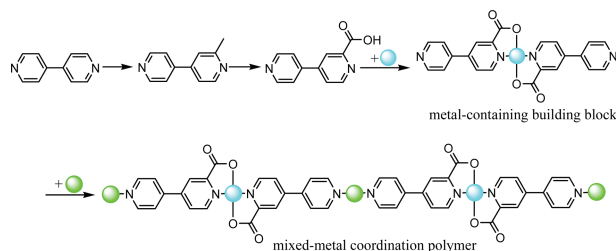


A simple, convenient method to synthesize cobalamins: synthesis of homocysteinylcobalamin, *N*-acetylcysteinylcobalamin, 2-*N*-acetyl-amino-2-carbomethoxyethanethiolatocobalamin, sulfitecobalamin and nitrocobalamin

Edward Suarez-Moreira, Luciana Hannibal, Clyde A. Smith, Roberto A. Chavez, Donald W. Jacobsen and Nicola E. Brash*

A series of novel and biologically relevant vitamin B₁₂ derivatives have been synthesized and characterized.

5278

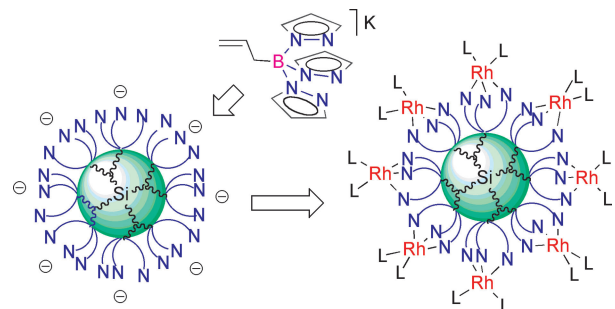


A new 2-carboxylate-substituted 4,4'-bipyridine ligand: coordination chemistry of 4,4'-bipyridine-2-carboxylic acid and its synthetic intermediate 2-methyl-4,4'-bipyridine

Chun-Long Chen, Joseph M. Ellsworth, Andrea M. Goforth, Mark D. Smith, Cheng-Yong Su and Hans-Conrad zur Loye*

The ligand 4-(pyridin-4-yl)pyridine-2-carboxylic acid is a good candidate, similar to pyrazinecarboxylate, for the formation of metal-containing building blocks and mixed-metal coordination polymers.

5287



Tris(pyrazolyl)borate carbosilane dendrimers and metalodendrimers

José A. Camerano, Miguel A. Casado,* Miguel A. Ciriano* and Luis A. Oro

The synthesis of a scorpionate-type ligand, its further anchoring at the periphery of carbosilane dendrimers, and their ability to form surface-grafted metalodendrimers is described.

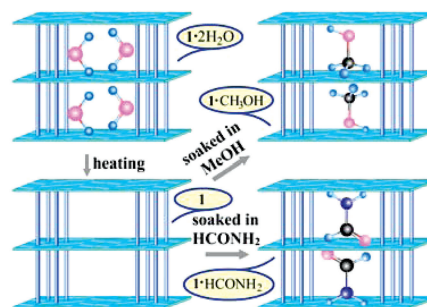
PAPERS

5294

A robust microporous 3D cobalt(II) coordination polymer with new magnetically frustrated 2D lattices: single-crystal transformation and guest modulation of cooperative magnetic properties

Ming-Hua Zeng, Xiao-Long Feng, Wei-Xiong Zhang and Xiao-Ming Chen*

The hydrothermally generated $[\text{Co}_2(\text{malate})(\text{isonicotinate})]_n \cdot 2n\text{H}_2\text{O}$ is stable for single-crystal-to-single-crystal transformations in guest-removal/exchange, leading to the tuning of the magnetic behaviour.

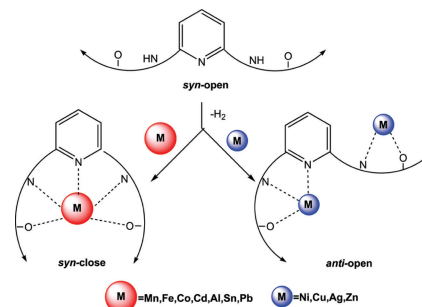


5304

Influence of the metal size in the structure of the complexes derived from a pentadentate $[\text{N}_3\text{O}_2]$ hydrazone

Rosa Pedrido, M. José Romero, Manuel R. Bermejo,* Ana M. González-Noya, Marcelino Maneiro, M. Jesús Rodríguez and Guillermo Zaragoza

We have prepared novel neutral silver, aluminium, tin and lead complexes, derived from the hydrazone ligand 2,6-bis(1-salicyloylhydrazoneethyl)pyridine [H_4daps] in order to study the influence of the metal size in the nuclearity of the complexes.



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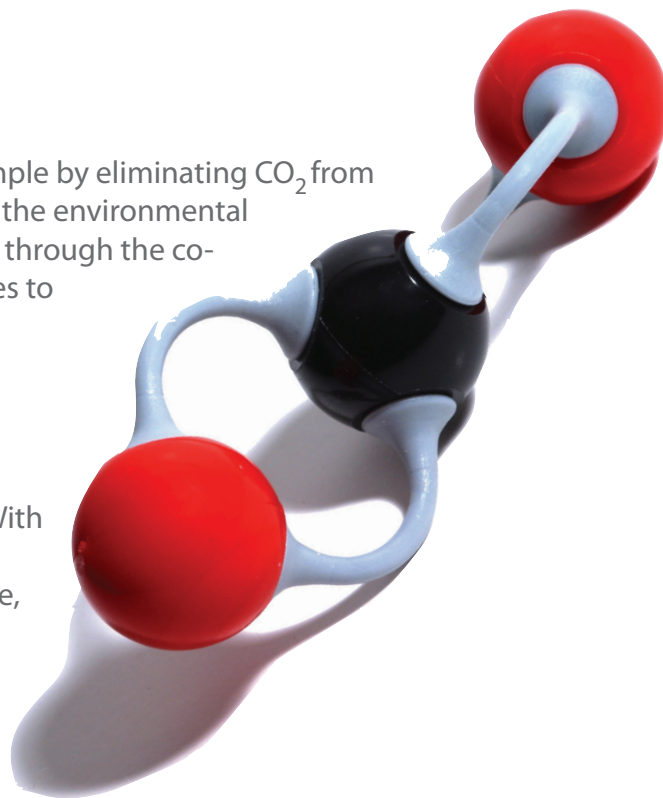
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CO₂ at metal centres

Methods for decreasing excess atmospheric CO₂, for example by eliminating CO₂ from gas-streams during air purification processes, are high on the environmental agenda. The chemistry of carbon dioxide at metal centres through the co-ordination of CO₂ or by reacting CO₂ with metal complexes to prepare carbon containing derivatives may hold some of the answers.

This timely web theme issue, guest edited by Dr. Roger Guilard, Professor of Chemistry at the University of Bourgogne in Dijon, France addresses exactly this topic. With contributed articles printed in regular issues of *Dalton Transactions* and collected online on a dedicated webpage, this first web theme issue from a series to appear in *Dalton Transactions* hails a new age in dynamic and flexible special issue publishing.



Topics covered in CO₂ at metal centres include:

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by various materials

Catalytic synthesis using CO₂ as a building block

CO₂ as a building block for
supramolecular assemblies

Chemistry of CO₂
inspired by nature

Metal assisted
catalytic reactions in
compressed CO₂

Activation of CO₂ via formation of metal-
CO₂ complexes or insertion into metal-
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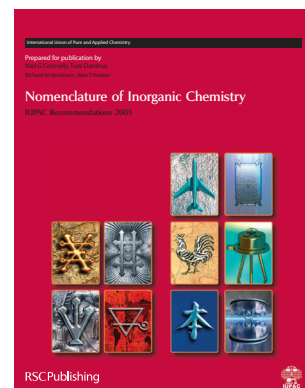
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