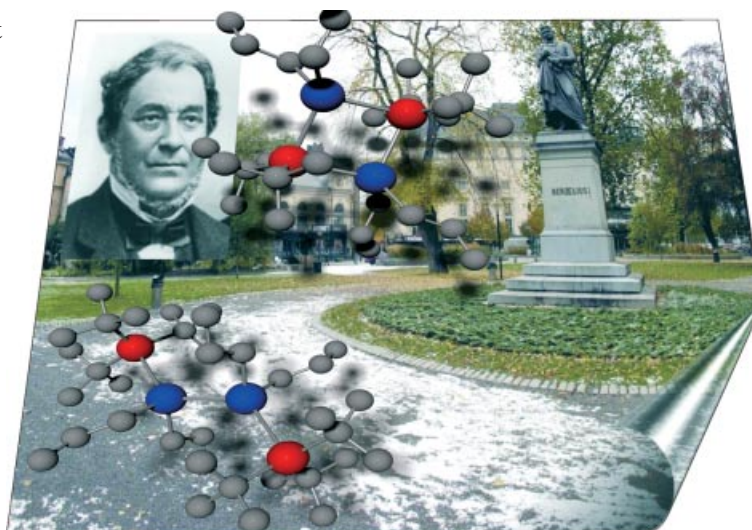




The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further EUChemSoc Societies (Austria, Czech Republic and Sweden) are Associates of the two journals.

## COVER PICTURE

The cover picture shows the photograph of Robert Bunsen and the statue of Jöns Jakob Berzelius in the centre of Berzeli Park (Stockholm). Both famous chemists investigated the chemistry of tetramethyldiarsane  $\text{As}_2\text{Me}_4$  (*kakodyl*), one of the first organometallic compounds that were initially prepared by Claude-Louis Cadet de Gassicourt (*Cadet's fuming liquid*) in 1757. Distibanes  $\text{Sb}_2\text{R}_4$ , the heavier congeners of diarsanes, exhibit much weaker metal–metal bonds and can be used for interesting bond-making and bond-breaking reactions with group 13 organometallic compounds. Details are discussed in the article by S. Schulz et al. on p. 931ff. The artwork was designed by Dr. Edgar Luttmann.



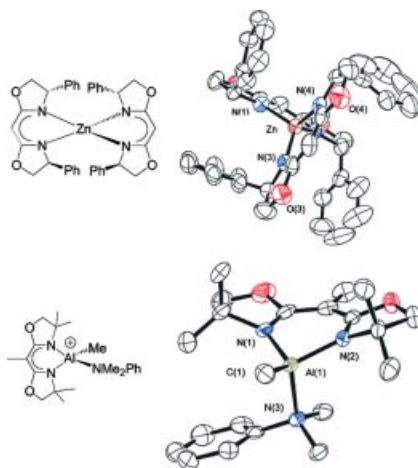
## MICROREVIEW

### Asymmetric Catalysis

S. Dagorne,\* S. Bellemin-Laponnaz,\*  
A. Maisse-François ..... 913–925

Metal Complexes Incorporating Mono-anionic Bisoxazolinolate Ligands: Synthesis, Structures, Reactivity and Applications in Asymmetric Catalysis

**Keywords:** Bisoxazolinolate ligand / Asymmetric catalysis / Metal complex / Coordination chemistry



The anionic and bidentate bisoxazolinolate ligand may be seen as an nitrogenated version of the acetylacetonate unit and as closely related to the diketiminate bidentate ligand; bisoxazolinolate ligands exhibit a rich and versatile coordination chemistry with various metal centers. These excellent coordination properties combined with their ready accessibility in an enantiomerically pure form has opened the way to various applications in asymmetric catalysis involving this class of bidentate ligands.

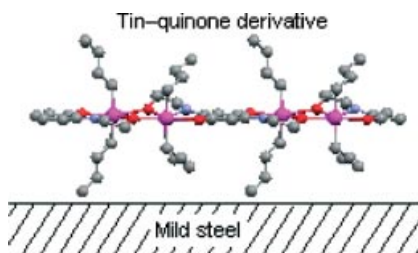
## SHORT COMMUNICATION

### Corrosion Inhibitors

V. Barba,\* E. Vega, H. Höpfl,  
L. S. Zamudio-Rivera,\*  
M. A. Domínguez-Aguilar,  
R. George-Tellez, F. Godínez-Salomon,  
J. M. Hallen-Lopez,  
H. I. Beltran ..... 927–930

A Bis(di-*n*-butyltin)–Quinone Derivative as a Simultaneous Chemo- and Bioactive Corrosion Inhibitor

**Keywords:** Tin / Quinones / Corrosion / Biocide activity / X-ray structure



A bis(di-*n*-butyltin)–quinone derivative was synthesized and characterized; it was shown that the organometallic complex has a discrete structure in solution. In the solid state a coordination polymer is formed through Sn...O intermolecular bonds. The corrosion inhibition efficiency for steel and the inhibitory effect on aerobic and anaerobic bacteria were evaluated, showing that the title compound is a simultaneous chemo- and bioactive anticorrosion agent. Acute toxicity tests indicated a relatively low toxicity level for the environment.

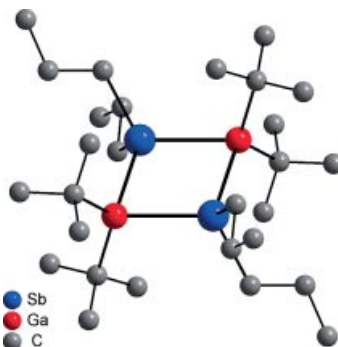
## FULL PAPERS

### Distibanes

D. Schuchmann, A. Kuczkowski,  
S. Fahrenholz, S. Schulz,\*  
U. Flörke ..... 931–935

Reactions of Group 13 Organometallics  $t\text{Bu}_3\text{M}$  with Distibanes  $\text{Sb}_2\text{R}_4$

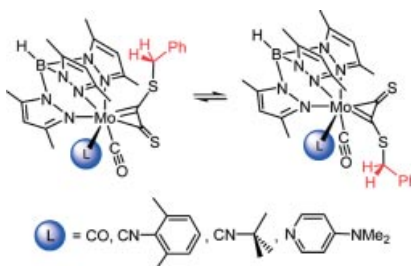
**Keywords:** Main group elements / Lewis acids / Lewis bases / Solid-state structures



Reactions of tetraalkyldistibanes  $\text{Sb}_2\text{R}_4$  with  $t\text{Bu}_3\text{M}$  ( $\text{M} = \text{Al}, \text{Ga}$ ) initially yield Lewis acid–base adducts  $[t\text{Bu}_3\text{M}]_2[\text{Sb}_2\text{R}_4]$  [ $\text{M} = \text{Al}$ ,  $\text{R} = n\text{Pr}$  (1),  $i\text{Bu}$  (2);  $\text{M} = \text{Ga}$ ,  $\text{R} = n\text{Pr}$  (3),  $i\text{Pr}$  (4)], which in the case of the gallane adducts undergo Sb–Sb bond-breakage reactions with the subsequent formation of heterocyclic stibanylgallanes  $[t\text{Bu}_2\text{GaSbR}_2]_2$  [ $\text{R} = n\text{Pr}$  (5),  $i\text{Bu}$  (6)].

## $\eta^2$ -Alkyne-1-thio Complexes

Not the steric demand but the  $\sigma$ -donor- $\pi$ -acceptor behavior of solely one ligand L markedly determines the rate of the alkyne rotation. The influence of L on the preparation and on the electronic properties of  $\eta^2$ -C,C'-(BnS)alkyne complexes with a terminal sulfur atom has been investigated.



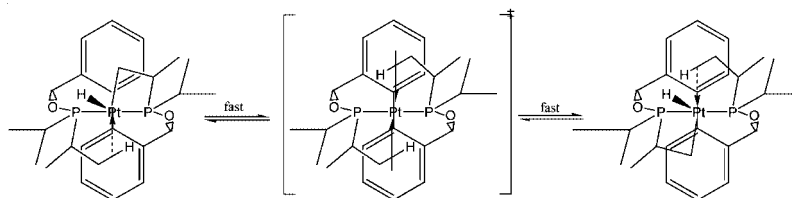
W. W. Seidel,\* B. L. Sánchez, M. J. Meel, A. Hepp, T. Pape ..... 936–943

Electronic Control of the Rotational Barrier in  $\eta^2$ -Alkyne-1-thio Complexes

**Keywords:** (Alkylthio)alkyne ligands / Alkyne complexes / Molybdenum / Fluxionality / Ligand effects



## Is It Possible To Cleave Biphenyls?



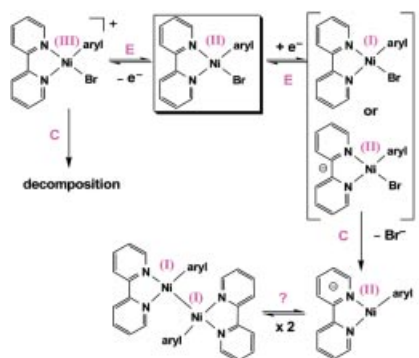
Dynamic C–H activation prevents an anticipated C–C single bond activation in a biphenyl fragment.

K. Ruhland,\* A. Brück, E. Herdtweck ..... 944–964

Investigation of the Thermal Decomposition of [biphen(QP*i*Pr)Pt(alk)<sub>2</sub>]: An Entry to C–C Single Bond Activation?

**Keywords:** Platinum / Reaction mechanisms / C–H activation / C–C activation / Agostic interactions

Electron-transfer (E) and follow-up chemical reactions (EC) of organometallic nickel complexes are studied in detail by various electrochemical and spectroelectrochemical (UV/Vis/NIR or EPR) methods. The metal oxidation states are discussed on the basis of the results of these experiments.



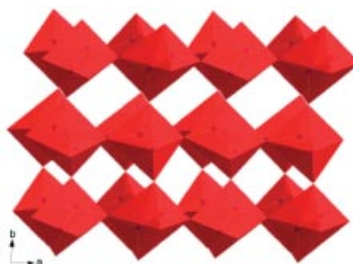
## Redox Properties of Ni Complexes

A. Klein,\* A. Kaiser, B. Sarkar, M. Wanner, J. Fiedler ..... 965–976

The Electrochemical Behaviour of Organonickel Complexes: Mono-, Di- and Trivalent Nickel

**Keywords:** Electron transfer / Nickel / Electrochemistry / EPR spectroscopy / Spectroelectrochemistry

The supramolecular complexes [Hg<sub>6</sub>Z<sub>4</sub>](MX<sub>6</sub>)Hg<sub>y</sub> (Z = As, Sb; M = Hg, Cd; X = Cl, Br, I; y = 0, 0.5, 0.6) consist of discrete anion guests and a perovskite-like, 3D cationic framework composed of corner-sharing distorted As<sub>2</sub>Hg<sub>6</sub> or Sb<sub>2</sub>Hg<sub>6</sub> octahedra that possesses two types of closed cavities with different sizes. The octahedral anion guests (MX<sub>6</sub>)<sup>4–</sup> are embedded in the larger cavities, while the smaller cavities trap the excess mercury atoms or remain empty. The electronic band structures and density of states (DOS) for these compounds are calculated by density functional methods.



## Inorganic Supramolecular Chemistry

J.-P. Zou, Y. Li, M.-L. Fu, G.-C. Guo,\* G. Xu, X.-H. Liu, W.-W. Zhou, J.-S. Huang ..... 977–984

The Synthesis, Crystal and Band Structures, and Properties of the Quaternary Supramolecular Complexes [Hg<sub>6</sub>Z<sub>4</sub>](MX<sub>6</sub>)Hg<sub>y</sub> (Z = As, Sb; M = Hg, Cd; X = Cl, Br, I; y = 0, 0.5, 0.6)

**Keywords:** Density functional calculations / Host–guest systems / Pnictides / Semiconductors / Supramolecular chemistry



# CONTENTS

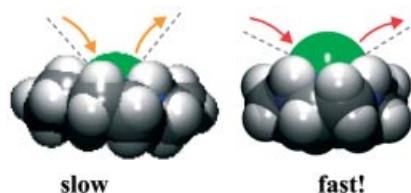
## Cationic Zinc Thiolates

J. Notni, W. Günther,  
E. Anders\* ..... 985–993



Zinc Thiolate Complexes  $[\text{ZnL}_n(\text{SR})]^+$  with Azamacrocyclic Ligands, Part III: The Influence of the Ligand  $\text{L}_n$  on the Reactivity of Zinc-Bound Thiolate

**Keywords:** Zinc / Sulfur ligands / Kinetics / Density functional calculations / Enzyme models



Reactions proceeding by an associated (metal-bound) mechanism are faster in cases of decreased obstruction of the zinc(II) ion by the macrocyclic ligand. This effect overrides electronic and/or orbital reaction control, as inferred from correlation plots of kinetic data against structural and electronic parameters obtained from density functional calculations.

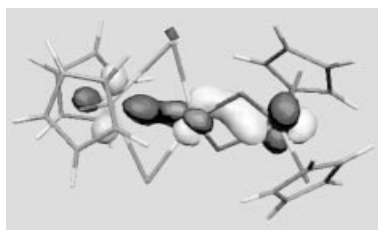
## Tetratellurometallates

M. Brandl, A. Ebner, M. M. Kubicki,  
Y. Mugnier, J. Wachter,\* E. Vigier-Juteau,  
M. Zabel ..... 994–1003



Syntheses, Properties and Structures of  $[(\text{C}_5\text{Me}_5)_2\text{Nb}]_2\text{NiTe}_4$  and  $[(t\text{BuC}_5\text{H}_4\text{-Nb})_2\text{Ni}_5\text{Te}_7(\text{Ph}_2\text{PCH}_2\text{PPh}_2)_2]$ : The Quest for Tetratelluronickelate Clusters

**Keywords:** Niobium / Nickel / Tellurium / Electrochemistry / Density functional calculations



Two heterometallic telluride clusters have been obtained from  $\text{Ni}(\text{COD})_2$ ,  $\text{Cp}_2\text{NbTe}_2\text{H}$ , and  $\text{Ph}_2\text{PCH}_2\text{PPh}_2$ . The formation of a severely distorted  $\text{NiTe}_4$  tetrahedron in  $[(\text{C}_5\text{Me}_5)_2\text{Nb}]_2\text{NiTe}_4$  may be assisted by Nb–Ni (intraannular) and Te–Te (interannular) bonding interactions.

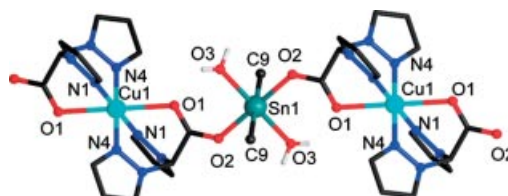
## Coordination Polymer

V. Chandrasekhar,\* P. Thilagar,  
T. Senapati ..... 1004–1009



Transition Metal-Assisted Hydrolysis of Pyrazole-Appended Organooxotin Carboxylates Accompanied by Ligand Transfer

**Keywords:** Organotin carboxylates / Organooxotin / Organostannoxane / Heterobimetallics / Supramolecular chemistry / Transition metals



The reaction of  $[\{n\text{Bu}_2\text{SnO}_2\text{CL}'\}_2\text{O}]_2$  (1),  $[\{n\text{Bu}_2\text{SnO}_2\text{CL}'\}_2\text{O}]_2$  (2)  $[n\text{BuSn}(\text{O})\text{O}_2\text{CL}']_6$  (3), and  $[n\text{BuSn}(\text{O})\text{O}_2\text{CL}']_6$  (4), ( $\text{L} = (\text{Pz})_2\text{CH}-$ ;  $\text{L}' = (3,5\text{-Me}_2\text{Pz})_2\text{CH}-$ ;  $\text{Pz} = \text{pyrazolyl}$ ) with hydrated metal salts leads to the hydrolysis of the organotin carboxylates and the formation of  $[\text{Cu}(\text{LCOO})_2(\text{NO}_3)_2(n\text{Bu}_2\text{Sn}((\text{H}_2\text{O})_2))]_n$   $[\text{Cu}(\text{LCOO})_2]$  (5),  $[\text{Mg}(\text{L}'\text{COO})_2]$  (6),

$[\text{Cu}(\text{LCOO})_2]$  (7), and  $[\{(\text{Cu}(\text{L}'\text{COO})_2 - (\text{Cu}(\text{MeOH})_3)\}\{\text{ClO}_4\}_2]_n$  (8). The solid-state structure of 5 reveals that two independent molecules are present in the same asymmetric unit. One of these is a heterobimetallic coordination polymer containing inter-linked  $[n\text{Bu}_2\text{Sn}(\text{H}_2\text{O})_4]$  and  $\text{Cu}(\text{LCOO})_2$  sub-units.

## Coordination Polymers

M. Bröring,\* S. Prikhodovski,  
E. C. Tejero, S. Köhler ..... 1010–1019



Tripyrriatocadmium Complexes: Enforcing Supramolecular Aggregation by a Large Ion

**Keywords:** Tripyrrin / Cadmium / Porphyrinoids / Supramolecular chemistry

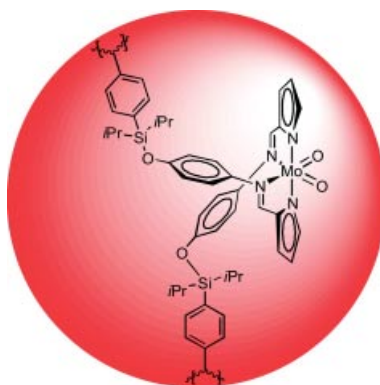


The employment of the large  $\text{Cd}^{\text{II}}$  ion in an open-chain tripyrrolic ligand environment results in a simple, yet very effective approach for the construction of new supramolecular systems. The combination of either pseudohalide or  $O,O$ -chelate anions with cadmium(II)-tripyrin complex fragments proved very successful and resulted in the formation of various 1D-chain structures.




## Metalloenzyme Models

A truly functional model system for molybdenum oxotransferases provides evidence for all biologically realistic intermediates, namely mononuclear  $\text{Mo}^{\text{VI}}$ ,  $\text{Mo}^{\text{V}}$  and  $\text{Mo}^{\text{IV}}$  species. Dinucleation to EPR-silent  $[\text{Mo}_2\text{O}_3]$  species prevailing in homogeneous solution is suppressed by immobilising the active species to a polymeric support by two-point attachment.

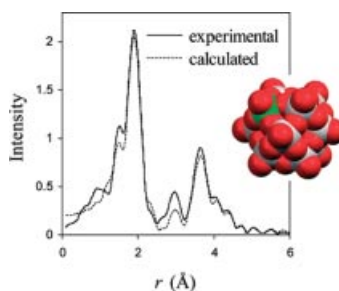


**K. Heinze,\* A. Fischer ..... 1020–1026**

Polymer-Supported Dioxido- $\text{Mo}^{\text{VI}}$  Complexes as Truly Functional Molybdenum Oxotransferase Model Systems 

**Keywords:** Enzyme models / Immobilised complexes / Molybdenum / Nitrogen ligands / Oxygen transfer

A systematic study of metal coordination in the Keggin-type anions  $[\text{PW}_{12}\text{O}_{40}]^{3-}$ ,  $[\text{PW}_{11}\text{O}_{39}]^{7-}$ ,  $[\text{PW}_{11}\text{M}(\text{H}_2\text{O})\text{O}_{39}]^{4-}$ ,  $\text{M} = \text{Fe}, \text{Ru}$ , and  $[\text{XW}_{11}\text{Mn}^{\text{III}}(\text{H}_2\text{O})\text{O}_{39}]^{n-}$ ,  $\text{X} = \text{P}, \text{Si}, \text{B}$ , was performed by EXAFS spectroscopy using multiple- and single-scattering analysis. This study allowed for the comparison of average inter-atomic distances in the different heteropolyanions of the same family in tetrabutylammonium salts and in acetonitrile solution.



## Keggin-Type Polyoxotungstates

**M. S. S. Balula, I. C. M. S. Santos, J. A. F. Gamelas, A. M. V. Cavaleiro,\* N. Binsted, W. Schlindwein .... 1027–1038**

Structural Studies of Keggin-Type Polyoxotungstates by Extended X-ray Absorption Fine Structure Spectroscopy

**Keywords:** Polyoxometalates / Keggin / EXAFS spectroscopy

If not otherwise indicated in the article, papers in issue 6 were published online on February 13, 2007