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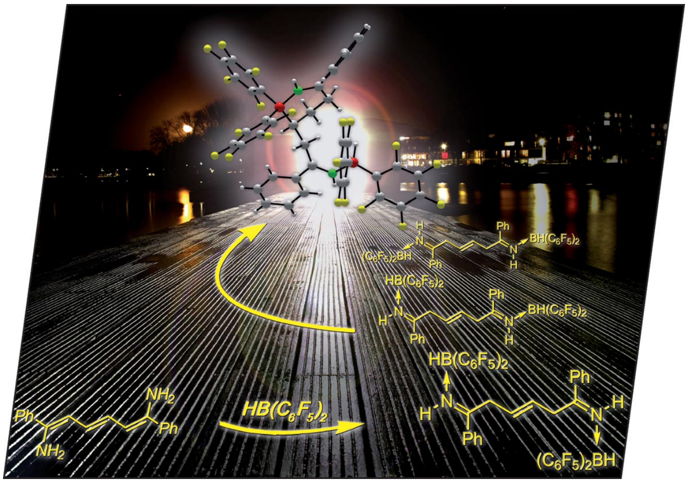
COVER PICTURE

The cover picture shows a sketch of the reaction of a rare example of a stable conjugated primary enamine with Piers' borane that initially leads to the formation of the borane-stabilized imine tautomers, which subsequently rearrange to the hydroboration product whose favoured imine−borane coordinated structure was characterized by X-ray diffraction. Details are discussed in the article by G. Erker et al. on p. 849ff.



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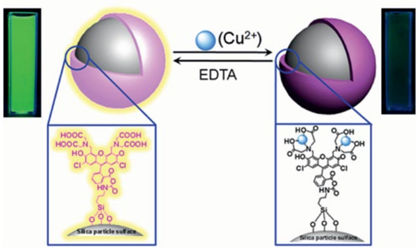
SHORT COMMUNICATION

Cu Chemosensors

S. Seo, H. Y. Lee, M. Park, J. M. Lim, D. Kang,* J. Yoon,* J. H. Jung* 843–847

Fluorescein-Functionalized Silica Nanoparticles as a Selective Fluorogenic Chemosensor for Cu^{2+} in Living Cells

Keywords: Sensors / Copper / Fluoresence / Nanoparticles / Silica



The optical binding ability of fluorescein-functionalized silica nanoparticles to heavy metal ions was investigated in aqueous solution. These nanoparticles act as a new type of synthetic fluorogenic chemosensor for imaging Cu^{2+} ions in living cells.

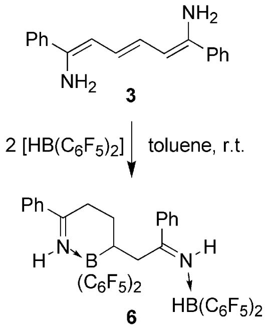
FULL PAPERS

Hydroboration

I. Peuser, R. Fröhlich, G. Kehr, G. Erker* 849–853

Reaction of a Stable Conjugated Primary Enamine with Piers' Borane

Keywords: Lewis acids / Tautomerization / Hydroboration / Boron / Enamine



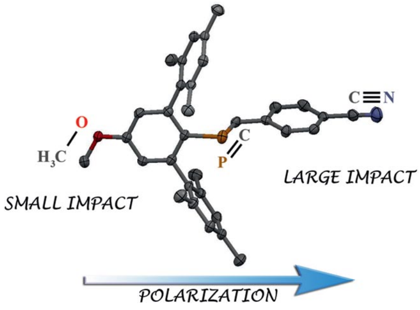
The stable conjugated primary enamine $Ph{-}C(NH_2){=}CH{-}CH{=}CH{-}CH{=}C{-}(NH_2){-}Ph$ (**3**) reacts with $[HB(C_6F_5)_2]$ by tautomerization and internal hydroboration to yield the heterocyclic product **6**.

Polarized Phosphaalkenes

V. B. Gudimetla, L. Ma, M. P. Washington, J. L. Payton, M. C. Simpson, J. D. Protasiewicz* 854–865

meta-Terphenyl Phosphaalkenes Bearing Electron-Donating and -Accepting Groups

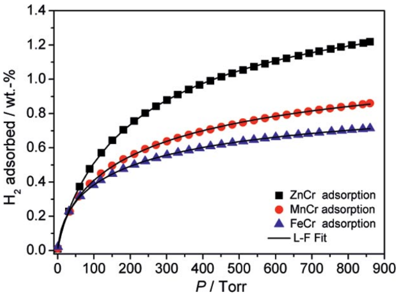
Keywords: Phosphorus / Phosphaalkenes / Solid-state structures / Electrochemistry



Substituted *meta*-terphenyl phosphaalkenes have been synthesized to allow systematic studies of the impact of remote substituents on the phosphaalkene unit. Introduction of remote groups on the less hindered phenyl ring generated more significant effects on the physical properties of the materials than did substituents on the hindered *meta*-terphenyl rings.

Hydrogen Storage Materials

Three porous Prussian blue analogues KM[Cr(CN)$_6$] (M = Zn, Mn, Fe) have been synthesized and characterized structurally. The thermal stabilities and permanent porosities were investigated by thermal gravimetric analysis, variable-temperature powder XRD experiments and gas sorption measurements. Hydrogen sorption studies demonstrated higher H$_2$ uptake capacities for the porous materials at 77 K.



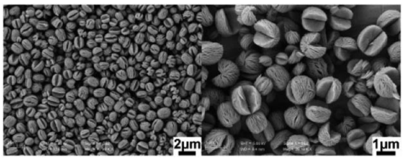
A.-H. Yuan,* C.-X. Chu, H. Zhou, P. Yuan, K.-K. Liu, L. Li, Q.-F. Zhang, X. Chen, Y.-Z. Li **866–871**

Syntheses, Crystal Structures and Gas Sorption Properties of Prussian Blue Analogues Constructed from [Cr(CN)$_6$]$^{3-}$ Building Blocks

Keywords: Microporous materials / Prussian blue analogues / Structure elucidation / Adsorption

γ-AlOOH Superstructures

Three-quarter-sphere-like γ-AlOOH was synthesized on the basis of the layered hydroxide structure. The decomposition of urea and acidity played important roles in the morphology of the γ-AlOOH products, which have potential application in removal of hexavalent chromium pollutants from toxic solutions and reduction of the amount of tobacco-specific nitrosamines (TSNAs) in cigarette smoke.



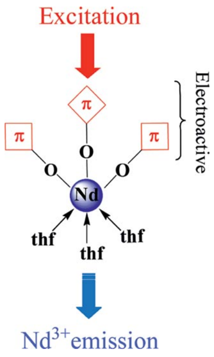
Y. Zhu, H. W. Hou,* G. L. Tang, Q. Y. Hu* **872–878**

Synthesis of Three-Quarter-Sphere-Like γ-AlOOH Superstructures with High Adsorptive Capacity

Keywords: γ-AlOOH / Hydrothermal synthesis / Layered compounds / Chromium / Nitrosamines

Luminescent Lanthanide Alkoxides

Two novel mononuclear neodymium methoxides containing thienyl substituents have been synthesized and structurally characterized. The physico-chemical properties of a series of rare earth thienyl-substituted methoxides are presented. The luminescence spectra of the neodymium alkoxides reveal an energy transfer from the ligand to the metal centre.



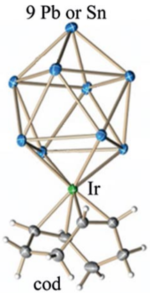
M. Veith,* C. Belot, V. Huch, H. L. Cui, L. Guyard, M. Knorr, C. Wickleder **879–889**

Synthesis, Crystal Structure and Physico-Chemical Studies of Neodymium and Erbium Methoxides Containing Thienyl Substituents

Keywords: Lanthanides / Electrochemistry / Luminescence / Thienyl methoxides

Bimetallic Clusters

The ions [Sn$_9$Ir(cod)]$^{3-}$ and [Pb$_9$Ir(cod)]$^{3-}$ (cod = 1,5-cyclooctadiene) were synthesized and the reactions of the labile Ir complexes with Sn$_9$$^{4-}$ and Pb$_9$$^{4-}$ studied. Both clusters possess a C$_{4v}$-type *closo*-deltahedral structure with 22 electrons and are diamagnetic. The clusters described are the first Ir–Sn and Ir–Pb bimetallic clusters and are examples of homologous Sn-Pb transition-metal derivatives.



D. O. Downing, P. Zavalij, B. W. Eichhorn* **890–894**

The *closo*-[Sn$_9$Ir(cod)]$^{3-}$ and [Pb$_9$Ir(cod)]$^{3-}$ Zintl Ions: Isostructural Ir^{I} Derivatives of the *nido*-E$_9$$^{4-}$ Anions (E = Sn, Pb)

Keywords: Zintl anions / Cluster compounds / Structure elucidation / Charge transfer / Solid-state structures

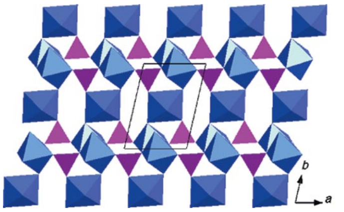
CONTENTS

Magnetic Metal Phosphonates

P.-F. Wang, S.-S. Bao, S.-M. Zhang, D.-K. Cao, X.-G. Liu, L.-M. Zheng* 895–901

Pillared Layered Metal Phosphonates Showing Field-Induced Magnetic Transitions

Keywords: Copper / Cobalt / Phosphonates / Layered compounds / Metamagnetism / Spin flop



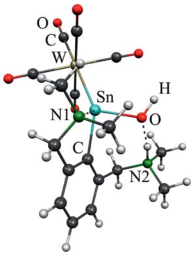
Metal phosphonates $M_3(pna)_2(H_2O)_2$ {**1**: M = Cu^{II}, **2**: M = Co^{II}; $pnaH_3$ = 6-phosphononicotinic acid} with pillared layered structures are reported. Compound **1** features a spin flop transition, whereas **2** shows metamagnetic behavior.

Organotin Cations

R. Jambor,* B. Kašná, S. G. Koller, C. Strohmann,* M. Schürmann, K. Jurkschat* 902–908

$[\{2,6\text{-}(Me_2NCH_2)_2C_6H_3(H_2O)Sn\}W(CO)_5]^+$-$CB_{11}H_{12}^-$: Aqua Complex of a Transition-Metal-Bound Organotin(II) Cation versus an Ammonium-Type Structure

Keywords: Tin / Tungsten / Cations / Structure elucidation / X-ray diffraction / Density functional calculations



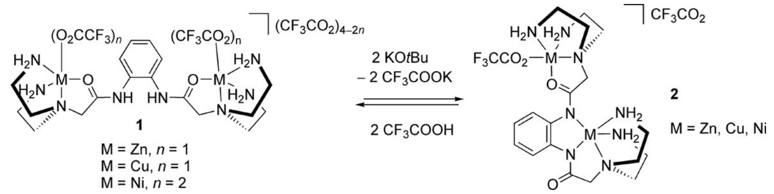
Intramolecular N→Sn coordination stabilizes the transition-metal-bound tin(II) cation. However, this coordination can easily be broken by a water molecule to give the title compound. This implies that the coordination of organic substrates should also be possible and that this compound has the potential for catalysis.

Switch of Coordination Mode

F. E. Hahn,* H. Schröder, T. Pape, F. Hupka 909–917

Zinc(II), Copper(II), and Nickel(II) Complexes of Bis(tripodal) Diamide Ligands – Reversible Switching of the Amide Coordination Mode upon Deprotonation

Keywords: Tripodal ligands / Dimetallic complexes / N,O ligands / Amides / Coordination modes



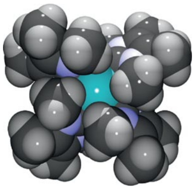
Dinuclear complexes of type **1** (M = Zn^{II}, Cu^{II}, Ni^{II}) rearrange upon deprotonation of the amide N atoms of the dinucleating ligand to give complexes **2**. In the rearrangement the coordination chemistry of one metal atom remains unchanged while the second one becomes coordinated by the two amidate nitrogen atoms generated by deprotonation and the aliphatic amine donors. The deprotonation/rearrangement reaction is reversibel.

Hydridoruthenium Complexes

R. Wolf,* M. Plois, A. Hepp 918–925

Neutral and Cationic Hydridoruthenium Tetrakiscarbene Complexes

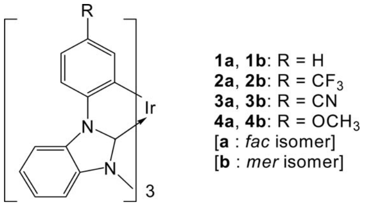
Keywords: Ruthenium / Hydrides / Carbene ligands



Carbene-supported, neutral or cationic hydridoruthenium complexes can be prepared selectively by using $LiAlH_4$ or $LiBHEt_3$ as the hydride source. Neutral *trans*-$[RuH_2(IMe)_4]$ (**2**) has two hydrido ligands in a *trans* arrangement, while cationic $[RuH(IMe)_4]^+$ (**3**) features a vacant coordination pocket, which renders this complex very attractive for the binding and activation of small molecules.

Blue Phosphorescent Ir Complexes

Facial and meridional isomers of tris(4-R-phenyl)benzimidazolinato Ir^{III} complexes (R = H, CF_3, CN, OCH_3) were prepared. Some of them showed efficient pure blue emission in thf. Their quantum yields, lifetimes, and oxidation potential energies were measured. In addition, X-ray single crystallography and TD-DFT calculations were applied to investigate the structures and energies of complexes.



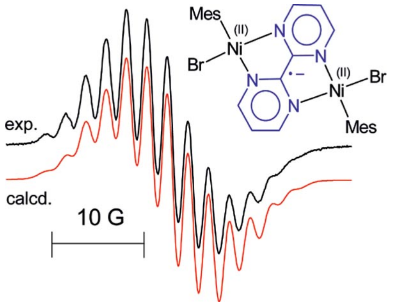
K. Tsuchiya, S. Yagai, A. Kitamura, T. Karatsu,* K. Endo, J. Mizukami, S. Akiyama, M. Yabe **926–933**

Synthesis and Photophysical Properties of Substituted Tris(phenylbenzimidazolinato) Ir^{III} Carbene Complexes as a Blue Phosphorescent Material

Keywords: Phosphorescence / Carbene ligands / OLEDs / Iridium / Density functional calculations

Electron Transfer

The mono- and binuclear organometallic Ni^{II} complexes $[(\mu\text{-bpym})\{Ni(Mes)Br\}_n]$ can be easily reduced to give the corresponding radical complexes. EPR spectroscopy reveals the almost exclusively ligand-centred unpaired electron and hampered metal-to-ligand overlap for the binuclear complex.



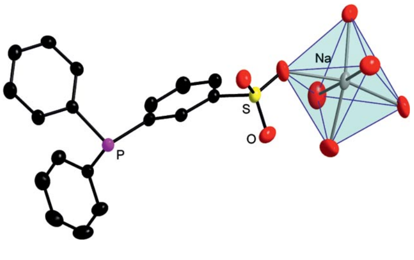
A. Klein,* A.-K. Schmieder, N. Hurkes, C. Hamacher, A. O. Schüren, M. P. Feth,* H. Bertagnolli **934–941**

Mono- and Binuclear Arylnickel Complexes of the α-Diimine Bridging Ligand 2,2′-Bipyrimidine (bpym)

Keywords: Nickel / Electrochemistry / EPR spectroscopy / N ligands / Radical complexes / Spectroelectrochemistry

Monosulfonated Triphenylphosphane

A simple and high-yield synthesis of the monosulfonated triphenylphosphane ($TPPMS^{Na}$) sodium salt is described. The solid-state structure of $TPPMS^{Na}\cdot 2.5H_2O$ was determined.



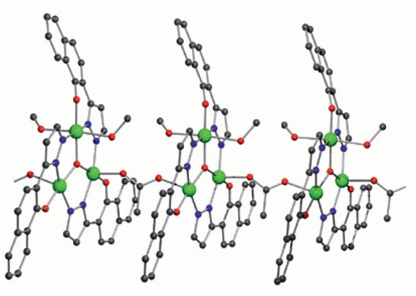
A. Karschin, W. Kläui,* W. Peters, B. Spingler **942–946**

High-Yield Synthesis and Crystal Structure Determination of Sodium Triphenylphosphane Monosulfonate ($TPPMS^{Na}$)

Keywords: Phosphane ligands / Surfactants / Sulfur / Structure elucidation

Molecular Magnetism

An oxide-centered trinuclear Mn^{III} compound, $[Mn_3(\mu_3\text{-}O)(naphpz)_3(O_2CMe)(MeOH)_2]_n$, in which the trinuclear units are bridged by acetate ligands, is presented. There are strong π–π interactions between the 1-D chains. Overall antiferromagnetic interactions exist between the Mn^{III} ions of the trinuclear unit and also between the trinuclear units within the 1-D chain and between the chains.



M. Viciano-Chumillas, S. Tanase, O. Roubeau, S. J. Teat, L. J. de Jongh,* J. Reedijk* **947–951**

An Oxide-Centered Trinuclear Manganese(III) Compound with a Bulky Phenol-Pyrazolate Ligand

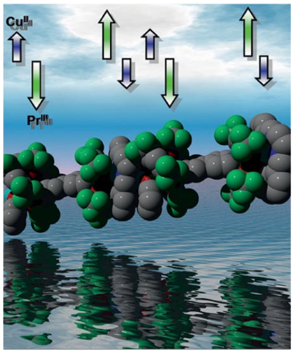
Keywords: Manganese / Cluster compounds / Magnetic properties / Bridging ligands / Phenol-pyrazole ligand

3d–4f Magnetic Chains

F. Pointillart,* K. Bernot 952–964

💻 Determination of the Nature of Exchange Interactions in the 3d–4f Magnetic Chain {[Cu(salen)Pr(hfac)$_3$]$_2$(L)}$_n$ (L = 4,4′-Bipyridine, Pyrazine)

Keywords: Copper / Nickel / Praseodymium / Crystal field / Magnetic properties



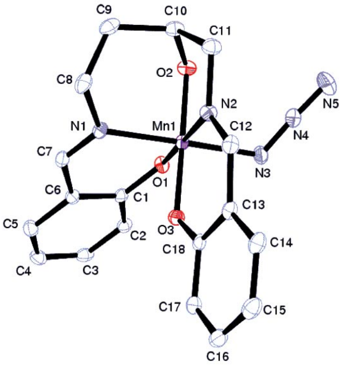
The nature of three magnetic interactions in a Cu^{II}–Pr^{III} magnetic chain {[{Cu(salen)}-{Pr(hfac$_3$)$_2$(pyz)}](H$_2$O)$_3$} has been determined by using a comparative method. The coordination of a nitrogenated ligand to the Pr^{III} ion changes its crystal field and affords a significant antiferromagnetic coupling between the Cu^{II} and Pr^{III} atoms.

Reactive Oxygen Scavengers

V. Daier, D. Moreno, C. Duhayon, J.-P. Tuchagues, S. Signorella* 965–974

💻 Synthesis, Characterization and Combined Superoxide Dismutase and Catalase Activities of Manganese Complexes of 1,4-Bis(salicylidenamino)butan-2-ol

Keywords: Manganese / Superoxide dismutase / Catalase / Biomimetic catalyst / Kinetics / Enzyme catalysis



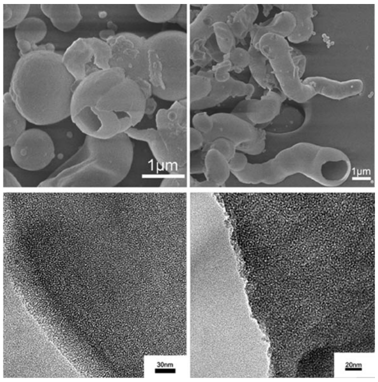
The asymmetric Schiff base ligand 1,4-bis(salicylidenamino)butan-2-ol stabilizes Mn^{IV} under conditions where related symmetric Schiff bases yield Mn^{III} complexes. The ligand arrangement around the metal center and the size of the chelate rings adjust the potential of the Mn^{III}/Mn^{IV} couple to approximately 400 mV. The accessibility of the Mn^{IV} state enables the complex to act as ROS scavenger.

Microporous Silica Materials

M. W. Zhao, Y. N. Gao, L. Q. Zheng,* W. P. Kang, X. T. Bai, B. Dong 975–982

Microporous Silica Hollow Microspheres and Hollow Worm-Like Materials: A Simple Method for Their Synthesis and Their Application in Controlled Release

Keywords: Microporous materials / Nanostructures / Template synthesis / Evaporation method / Ionic liquids



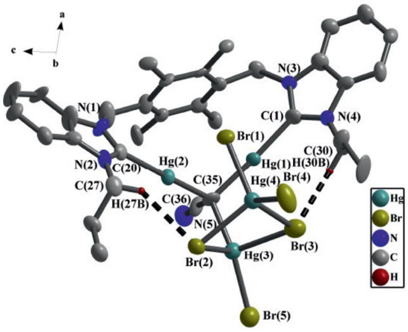
Hollow silica microspheres and hollow worm-like materials with microporous structures were synthesized by utilizing the combination of evaporation and an emulsion template. The morphologies of the product can be modulated by adjusting the temperature or stirring time. Preliminary tests show that the materials may have potential in controlled release.

N-Heterocyclic Carbenes

Q.-X. Liu,* S.-J. Li, X.-J. Zhao, Y. Zang, H.-b. Song, J.-H. Guo, X.-G. Wang 983–988

💻 Tetranuclear N-Heterocyclic Carbene Mercury(II) Complexes Containing Triply Deprotonated Acetonitrile: Synthesis and Structural Studies

Keywords: Carbenes / Mercury / Structure elucidation / Nitrogen heterocycles



Two funnel-like tetranuclear NHC–mercury(II) complexes [durene(CH$_2$bimy$n$Pr)$_2$-Hg$_2$(CCN)Hg$_2$Br$_5$] (**2a**) and [durene(CH$_2$-bimy$n$Bu)$_2$Hg$_2$(CCN)Hg$_2$Br$_5$] (**2b**) containing triply deprotonated acetonitrile were synthesized and characterized. In the crystal packings of **2a** and **2b**, the double-stranded 1D supramolecular chains are formed through intermolecular weak interactions.

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* Author to whom correspondence should be addressed.

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