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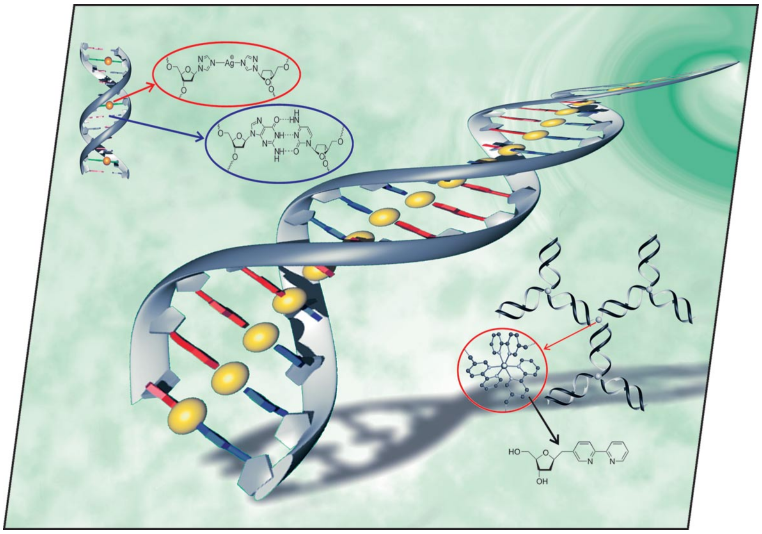
The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further EUChemSoc Societies (Austria, Czech Republic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

COVER PICTURE

The cover picture shows shows examples of nucleic acids functionalized site-specifically with metal ions. This was achieved by incorporating artificial nucleosides with a high affinity towards metal ions, which leads to the formation of metal-ion-mediated base pairs. The scheme on the left is a representation of a B-type double helix comprising both natural and artificial base pairs. Shown in the middle is a duplex containing a continuous stack of metal-ion-mediated base pairs, whereas the scheme on the right displays the possibility of using these artificial nucleosides for the formation of DNA-based networks. The Microreview by Jens Müller on p. 3749ff gives an introduction into this exciting new area of bioinorganic chemistry. We thank Dominik A. Megger for designing the cover picture.



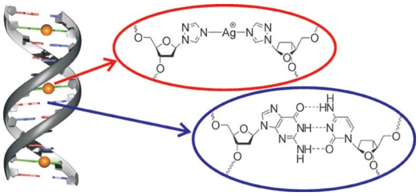
MICROREVIEW

Metal-Modified Nucleic Acids

J. Müller* .... **3749−3763**

Metal-Ion-Mediated Base Pairs in Nucleic Acids

Keywords: Bioinorganic chemistry / DNA / RNA / Nucleosides / Nucleobases



Nucleic acids can be functionalized site-specifically with metal ions via the incorporation of artificial ligand-based nucleosides. This review summarizes recent efforts in the generation and characterization of the metal-ion-mediated base pairs and suggests potential applications for the resulting metal-modified nucleic acids.

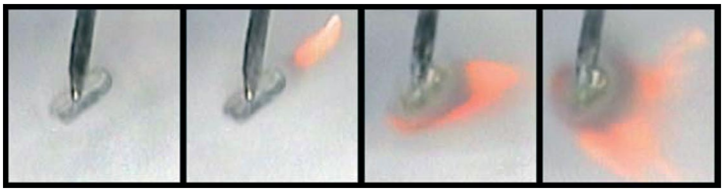
SHORT COMMUNICATION

Organolithium Compounds

T. Tatic, H. Ott, D. Stalke* ... **3765−3768**

Deaggregation of Trimethylsilylmethyllithium

Keywords: Aggregation / Carbanions / Lithium / N ligands / X-ray diffraction



Burning crystals of highly reactive organolithium compounds can be avoided by using application techniques with inert oil at low temperatures. The first structures of the dimers $[(TMEDA)\cdot LiCH_2Si(CH_3)_3]_2$ and $[\{(-)\text{-sparteine}\}\cdot LiCH_2Si(CH_3)_3]_2$ and the monomer $[(PMDETA)\cdot LiCH_2Si(CH_3)_3]$ are presented. The reactivity increases along the series from the donor free hexamer to the dimers and culminates at the monomer.

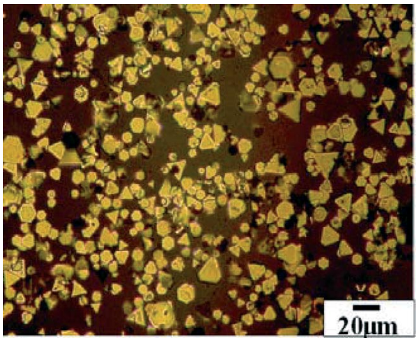
FULL PAPERS

Gold Nanoprisms

Y. Gao, A. Voigt,* M. Zhou, K. Sundmacher .... **3769−3775**

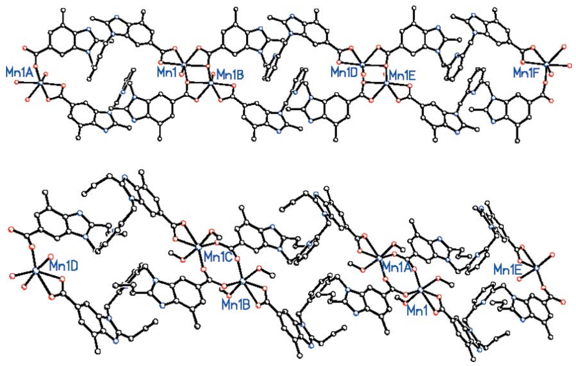
Synthesis of Single-Crystal Gold Nano- and Microprisms Using a Solvent-Reductant-Template Ionic Liquid

Keywords: Ionic liquids / Gold / Direct synthesis / Size control / Formation mechanism



A single-step procedure to obtain variable-sized nano- and microprisms of gold in ionic liquids is presented. Using an ionic liquid, 1-butyl-3-methylimidazolium hexafluorophosphate ($bmimPF_6$), as a solvent for the Au precursor as well as the reducing reagent for the reaction, one can control the size of the produced gold nanostructures.

Double-Stranded Chained Complexes



Two novel 2D supramolecular architectures derived from benzimidazolecarboxylato ligands are reported. They contain 1D double-stranded chains with metallomacrocylic subunits and dinuclear Mn^{II} subrings bridged by carboxylato units. The carboxylato groups exhibit different bridging modes, and the compounds have distinct magnetic properties.

S. Ma, D. Zhang, S. Gao, Y. He, H. Ma, C. Qi,* C. Fan, Y. Chen, X. Yang 3776–3785

Crystal Structures and Magnetic Properties of 2D Supramolecular Architectures Assembled from Benzimidazolecarboxylato-Bridged 1D Double-Stranded Coordinating Chains Featuring Metallomacrocycles as Subunits

Keywords: Manganese(II) complexes / Benzimidazolecarboxylic acid / Double-stranded coordinating chain / Metallomacrocycles / Magnetic properties

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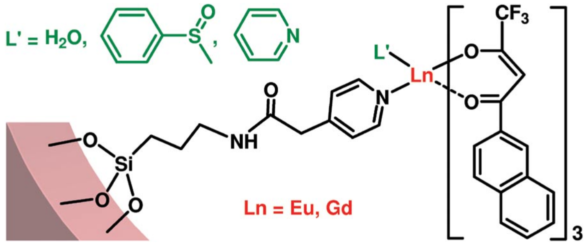
Luminescent Hybrid Materials



Functionalisation of the ordered mesoporous silica MCM-41 with pyridyl groups allowed the immobilisation of mixed ligand $Ln(nta)_3(L')(L'')$ lanthanide complexes. Photoluminescence studies of the supported species and the nonsupported $Eu(nta)_3(L')_2$ complexes indicate that the sensitisation of the Eu^{3+} ions is strongly affected by immobilisation.

S. M. Bruno, A. C. Coelho, R. A. S. Ferreira, L. D. Carlos, M. Pillinger, A. A. Valente, P. Ribeiro-Claro, I. S. Gonçalves* 3786–3795

MCM-41 Derivatised with Pyridyl Groups and Its Use as a Support for Luminescent Europium(III) Complexes

Keywords: Mesoporous materials / Lanthanides / Luminescence / Pyridine / β-Diketone

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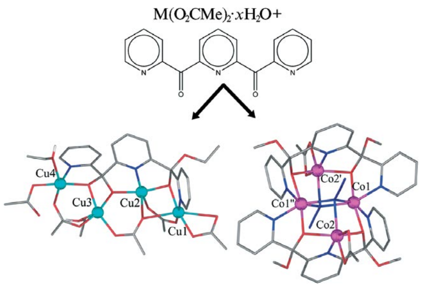
Ferromagnetic Clusters

Metal-assisted ($M^{II} = Cu^{II}, Co^{II}$) solvolysis of pyCOpyCOpy in alcohols leads to a Cu^{II}_4 and a Co^{II}_4 ferromagnetic cluster, the ferromagnetism of each being of different origin: in the first case, the poor overlap of magnetic orbitals induced by geometric constrains of the ligand, and in the second, the presence of end-on azido bridges.



A. K. Boudalis,* C. P. Raptopoulou, V. Psycharis, B. Abarca, R. Ballesteros 3796–3801

Ferromagnetism in Cu^{II}_4 and Co^{II}_4 Complexes Derived from Metal-Assisted Solvolysis of Di-2,6-(2-pyridylcarbonyl)pyridine: Syntheses, Structures, and Magnetic Properties

Keywords: Cluster compounds / Copper / Cobalt / Magnetic properties / Metal-assisted solvolysis

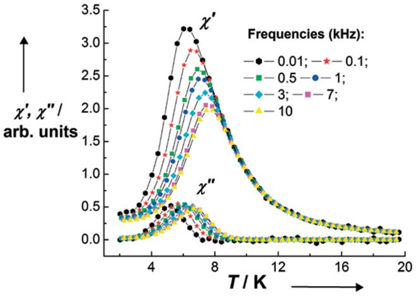
CONTENTS

Molecular Magnets in Nanopores

D. Cangussu, W. C. Nunes, C. L. M. Pereira, E. F. Pedroso, I. O. Mazali,* M. Knobel, O. L. Alves, H. O. Stumpf* 3802–3808

Slow Magnetic Relaxation in $Co^{II}Cu^{II}$ Coordination Oligomer Built into Mesoporous Material

Keywords: Cobalt / Copper / Magnetic properties / Mesoporous materials / Molecule-based magnets



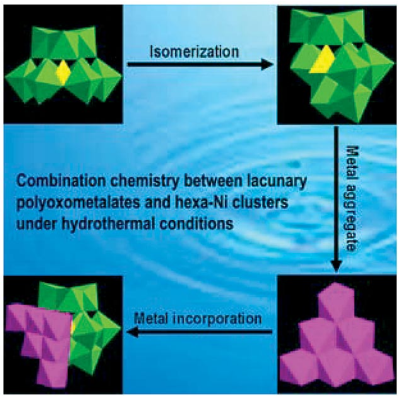
The incorporation of a $Co^{II}Cu^{II}$ chain in porous Vycor glass (PVG) was achieved by reaction in situ, and the magnetic properties indicate a collective spin reversal of the ferrimagnetic chains limited by the nanoporous size, leading to a slow relaxation of the magnetization at low temperatures.

Keggin-Type Germanotungstates

J.-W. Zhao, J. Zhang, Y. Song, S.-T. Zheng, G.-Y. Yang* 3809–3819

Two Hexanickel-Substituted Keggin-Type Germanotungstates

Keywords: Polyoxometalates / Hydrothermal synthesis / Nickel / Amines



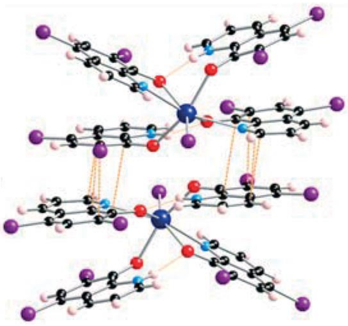
Two new inorganic–organic hybrid germanotungstates built from trivacant Keggin fragments and in situ generated hexanickel cluster units were hydrothermally prepared and structurally characterized.

Structure-Activity Relationships

F. Artizzu, K. Bernot, A. Caneschi, E. Coronado, J. M. Clemente-Juan, L. Marchiò, M. L. Mercuri, L. Pilia, A. Serpe, P. Deplano* 3820–3826

Synthesis, Structure, Spectroscopic Studies and Magnetic Properties of the Tetrakis(5,7-dichloro-8-quinolinolato)gadolinium(III) Complex

Keywords: Gadolinium / N,O ligands / Magnetic properties / Spectroscopy



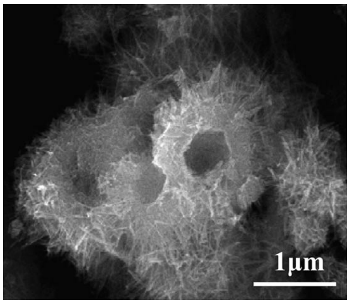
The characterization of the gadolinium complex with 5,7-dichloro-8-quinolinolato (H5,7ClQ) ligands, $[Gd(5,7ClQ)_2(H5,7ClQ)_2Cl]$, allows satisfactory interpretation of the properties of this new neutral tetrakis-type compound and points out that extensive π-stacking interactions affect its spectroscopic and magnetic behaviour.

Template Synthesis of MnO_2 Spheres

N. Wang, Y. Gao, J. Gong,* X. Ma, X. Zhang, Y. Guo, L. Qu 3827–3832

Synthesis of Manganese Oxide Hollow Urchins with a Reactive Template of Carbon Spheres

Keywords: Carbon spheres / Template synthesis / Manganese / Hollow urchins

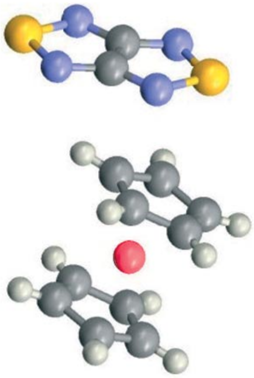


A novel approach involving the use of carbon spheres as a reactive template to prepare manganese oxide hollow spheres with an urchin-like morphology is presented. The mechanism of formation of the resulting product is investigated. This method opens a way to obtain different morphologies of metal oxides by changing the morphologies of the reactive carbon template.

Radical Anion Salts

**S. N. Konchenko,* N. P. Gritsan,*
A. V. Lonchakov, I. G. Irtegova, R. Mews,
V. I. Ovcharenko, U. Radius,
A. V. Zibarev* .... 3833−3838**

Cobaltocenium [1,2,5]Thiadiazolo[3,4-*c*]-[1,2,5]thiadiazolidyl: Synthesis, Structure, and Magnetic Properties



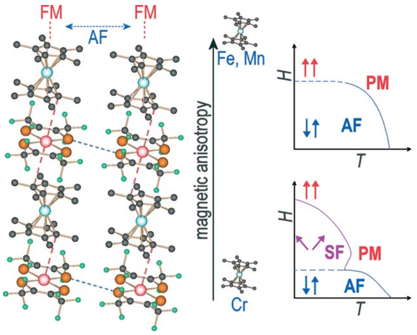
The title radical anion salt was prepared and its structure determined by XRD. Crystal packing of the salt displays a layered structure featuring belts of the radical anions connected by S···N contacts. Magnetic measurements on the salt in the temperature range 2−300 K reveal antiferromagnetic interactions (J = -4.2 ± 0.7 cm^{-1}). Theoretical calculations suggest that the salt possesses a 2D magnetic structure. Color code: gray = C, red = Co, light gray = H, blue = N, yellow = S.

Keywords: Cobaltocene / Magnetic properties / Sulfur−nitrogen heterocycles / Radical anions

Magnetic Anisotropy in CT Salts

**S. Rabaça, B. J. C. Vieira, R. Meira,
I. C. Santos, L. C. J. Pereira,
M. T. Duarte, V. da Gama* ... 3839−3851**

Magnetic Coupling and Anisotropy in a Series of Mixed Chain Charge-Transfer Salts [M(Cp*)$_2$][M′(tds)$_2$] (M = Fe, Mn, Cr; M′ = Ni, Pt)



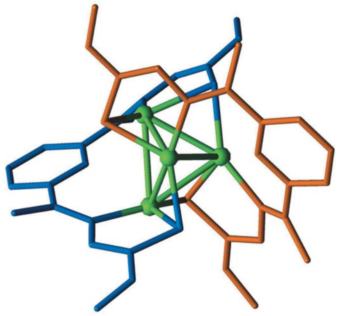
The structure of [M(Cp*)$_2$][M′(tds)$_2$] is based on parallel mixed donor−acceptor chains. The behavior of the compounds is dominated by ferromagnetic D−A intrachain coupling. Salts based on strongly anisotropic donors show phase diagrams with paramagnetic and antiferromagnetic phases, while with isotropic donors, a spin-flop phase is also present.

Keywords: Donor−acceptor systems / Metallocenes / Se ligands / Through-space interactions / Magnetic properties / Magnetic anisotropy

Cluster Helicates

**M. R. Bermejo,* A. M. González-Noya,
M. Martínez-Calvo, R. Pedrido,
M. J. Romero,
M. Vázquez López .... 3852−3863**

Checking the Route to Cluster Helicates



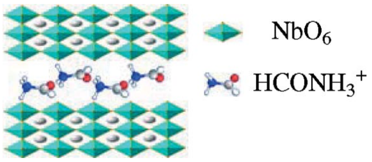
Nine new Zn^{II}, Cu^{I} and Ag^{I} complexes were prepared from three thiosemicarbazone Schiff base ligands. Zn^{II} generates dihelicates or mesocates, depending on the structure of the ligand. Ag^{I} and Cu^{I} yield tetranuclear cluster helicates; the general applicability of the synthetic route is thus demonstrated.

Keywords: Supramolecular chemistry / Self-assembly / Helicates / Mesocates / Cluster compounds

Reversible Intercalation

**C. Sun, P. Peng, L. Zhu, W. Zheng,*
Y. Zhao .... 3864−3870**

Designed Reversible Alkylamine Intercalation−Deintercalation in the Layered Perovskite-Type Oxide KCa$_2$Nb$_3$O$_{10}$



Reversibility is manifested for butylamine intercalation−deintercalation in the layered perovskite oxide KCa$_2$Nb$_3$O$_{10}$. The recycled layered perovskite oxides also maintain their layered structure and original properties. Two types of amine (butylamine and formamide) in the perovskite interlayer spaces can easily be exchanged.

Keywords: Layered perovskites / Alkylamines / Intercalation / Deintercalation / Reversible reactions

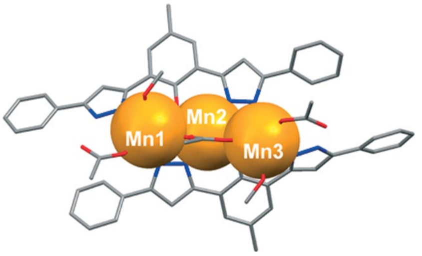
CONTENTS

Mixed-Valence Mn Complexes

L. A. Barrios, G. Aromí,* J. Ribas,
J. Salinas Uber, O. Roubeau, K. Sakai,
S. Masaoka, P. Gamez,
J. Reedijk* 3871–3876

💻 A Mixed-Valence [$Mn^{II}Mn^{III}Mn^{II}$] Complex of a Linear Phenol–bis(pyrazole) Ligand with an $S = 3$ Spin Ground State

Keywords: Pyrazole ligands / Manganese / Antiferromagnetic coupling / Mixed-valence complexes / Ligand design



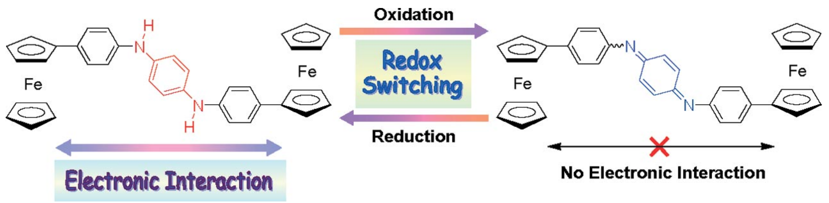
A novel phenol–bis(pyrazole) ligand designed to promote chain-like coordination clusters has led to the formation of a mixed-valence triad of Mn ions with formula [$Mn_3(Hpbpz)_2(OAc)_3(MeOH)_3$] (**1**), exhibiting a rare [$Mn^{II}-Mn^{III}-Mn^{II}$] sequence. The complex shows antiferromagnetic coupling and has a spin ground state of $S_T = 3$.

Redox-Switching Systems

T. Moriuchi, Y. Takagi,
T. Hirao* 3877–3882

💻 Ferrocenyl-Capped *p*-Phenylenediamine as a Redox-Switching System

Keywords: Metallocenes / N ligands / Coordination modes / Cyclic voltammetry / Structure elucidation



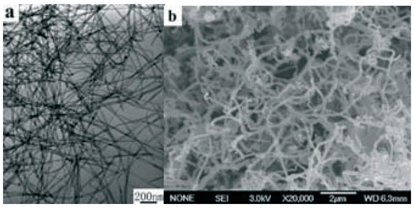
Terminal redox-active ferrocenyl groups were introduced into a *p*-phenylenediamine bridging spacer to provide a redox-switching system with electronic communication between the ferrocenyl groups through the π-conjugated bridging spacer. Communication was controlled by the redox interconversion of the *p*-phenylenediamine spacer.

Silicon Carbide Nanowires

Z. C. Ju, Z. Xing, C. L. Guo, L. S. Yang,
L. Q. Xu,* Y. T. Qian 3883–3888

Sulfur-Assisted Approach for the Low-Temperature Synthesis of β-SiC Nanowires

Keywords: Nanostructures / Crystal growth / Crystal morphology



β-SiC nanowires were prepared from Si, Na, and S powders and C_2Cl_4 by first heating in an autoclave at 130 °C and then by heating a H_2SO_4 solution at reflux. Microscopy showed that the product is mainly composed of SiC nanowires (over 75%) with an average diameter of ~30 nm and with lengths up to tens of micrometers. If sulfur was absent, β-SiC was only obtained with temperatures >270 °C.

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* Author to whom correspondence should be addressed.

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

If not otherwise indicated in the article, papers in issue 23 were published online on July 29, 2008