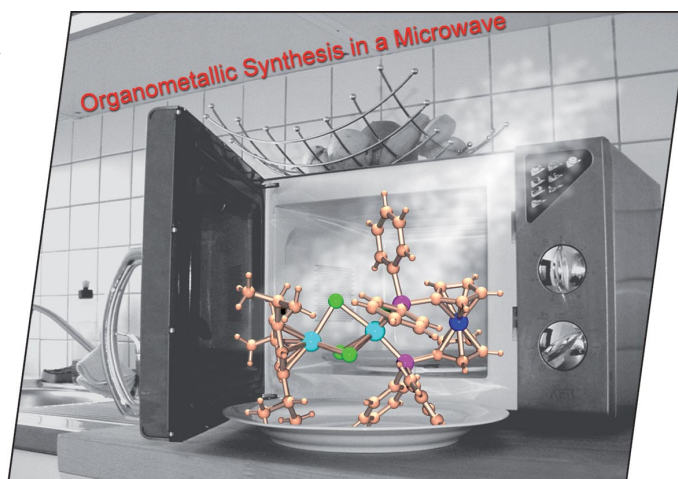




A union formed by chemical societies in Europe (ChemPubSoc Europe) has taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further members of ChemPubSoc Europe (Austria, Czech Republic and Sweden) are Associates of the two journals.

COVER PICTURE

The cover picture shows the molecular structure of a dinuclear ruthenium complex, which was obtained by an arene displacement reaction in a microwave oven. Although microwave heating has been used extensively in organic synthesis, there are relatively few reports about its application in preparative organometallic chemistry. On p. 1003ff, K. Severin et al. describe that $[(\text{arene})\text{Ru}(\mu\text{-Cl})_2\text{RuCl}(\text{L}-\text{L}')]]$ complexes with a diverse set of chelate ligands $\text{L}-\text{L}'$ are easily accessible by microwave heating. It should be mentioned, though, that the instrument used for their experiments was slightly more sophisticated than the one shown on the cover.



CONTENTS

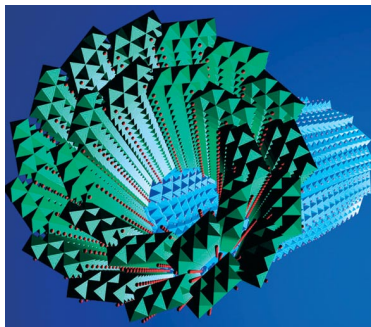
MICROREVIEW

Elongated Titanate Nanostructures

D. V. Bavykin,* F. C. Walsh 977–997

Elongated Titanate Nanostructures and Their Applications

Keywords: Layered compounds / Nanostructures / Titanium dioxide / Titanates



Applications of nanostructured titanates are reviewed from the perspectives of their structure and properties. Nanotubes, nanofibres and nanosheets are considered, and the key directions for further studies are identified.

SHORT COMMUNICATION

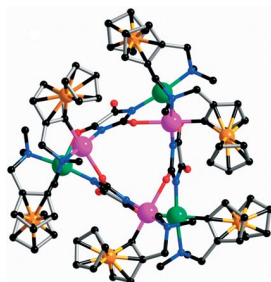
Enantiospecific Assembly

H. M. Colquhoun,* C. T. Powell, Z. Zhu, C. J. Cardin, Y. Gan, P. Tootell, J. S. W. Tsang, N. M. Boag 999–1002



Enantiospecific Assembly of a Homochiral, Hexanuclear Palladium Complex

Keywords: Enantioselectivity / Palladium / Ligand effects / N,O ligands / Polynucleation



Linking orthopalladated ferrocenylene units with parabanato(2–) ligands results in enantiospecific assembly of a homochiral, hexapalladium complex, as shown by ^1H NMR spectroscopy and single-crystal X-ray analysis. The six homochiral ferrocenylene-palladium groups (R,R,R,R,R,R or S,S,S,S,S,S) give rise to a tapering, twisted, trigonal-prismatic structure which shows overall helical chirality.

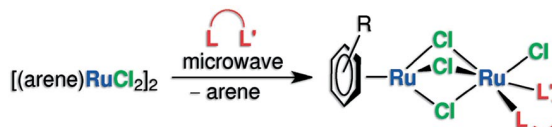
FULL PAPERS

Organometallic Synthesis

C. Albrecht, S. Gauthier, J. Wolf, R. Scopelliti, K. Severin* 1003–1010

Microwave-Assisted Organometallic Syntheses: Formation of Dinuclear [(Arene)- $\text{Ru}(\mu\text{-Cl})_3\text{RuCl}(\text{L-L}')$] Complexes ($\text{L-L}'$: Chelate Ligands with P -, N -, or S -Donor Atoms) by Displacement of Arene π Ligands

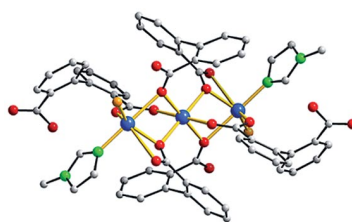
Keywords: Dinuclear complexes / Microwave synthesis / Arene ligands / Phosphane ligands / Ruthenium



Arene displacement reactions are promoted by microwave heating to afford dinuclear complexes of the general formula

$[(\text{arene})\text{Ru}(\mu\text{-Cl})_3\text{RuCl}(\text{L-L}')] (\text{L-L}': \text{chelate ligands with } P\text{-, } N\text{-, or } S\text{-donor atoms})$ in good yield.

Ferro- and antiferromagnetic exchange results from different coordination modes of diphenic acid (H_2dpa) to Co^{II} , as shown by the linear complex $[\text{Co}_3(\text{dpa})_2(\text{Hdpa})_2(1\text{-MeIm})_2(\text{H}_2\text{O})_2]$ and the two-dimensional coordination polymer $[\text{Co}_2(\text{dpa})_2(\text{pyz})]_n$, which features double-helical strands (1-MeIm = 1-methylimidazole, pyz = pyrazine).



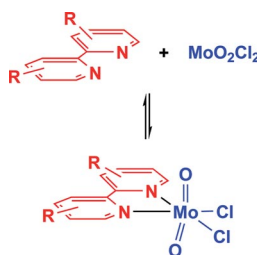
I. L. Malaestean, M. Speldrich,
S. G. Baca, A. Ellern, H. Schilder,
P. Kögerler* 1011–1018

Diphenic Acid-Based Cobalt(II) Complexes: Trinuclear and Double-Helical Structures

Keywords: Cobalt / Carboxylate ligands / Coordination polymers / Magnetic properties / N ligands

Adduct Formation with N Ligands

Both $(\text{CH}_3)_3\text{ReO}_3$ (MTO) and MoO_2Cl_2 form adducts with electron donors. The adducts formed with MoO_2Cl_2 are several orders of magnitude more stable than the MTO-derived compounds.



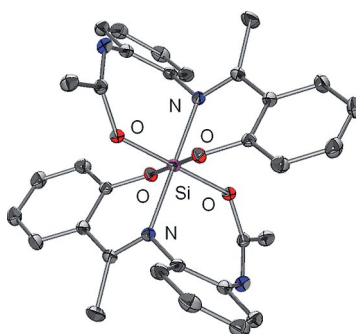
A. M. Al-Ajlouni, A. Günyar,
M.-D. Zhou, P. N. W. Baxter,
F. E. Kühn* 1019–1026

Adduct Formation of Dichloridodioxido-molybdenum(VI) and Methyltrioxidorhenium(VII) with a Series of Bidentate Nitrogen Donor Ligands

Keywords: Molybdenum / Rhenium / N ligands / Oxido ligands / Stability constants

Silicon Hypercoordination

Although a seemingly unsuitable choice ($\text{C}=\text{N}$ and $\text{C}-\text{O}$ vs. $\text{C}-\text{N}$ and $\text{C}=\text{O}$ bond, seven- vs. five-membered chelate, Si-out-of-chelate-plane position etc.), Schiff base type *N*-(2-carbamidophenyl)imines adopt a *fac*- $\text{O},\text{N},\text{O}'$ coordination mode in six-coordinate silicon complexes of the type SiL_2 .



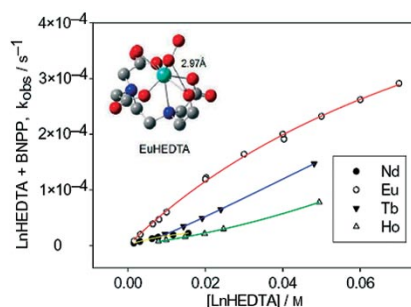
A. Kämpfe, E. Kroke,
J. Wagler* 1027–1035

Hypercoordinate Silicon Complexes of ($\text{O},\text{N},\text{N}'$ vs. $\text{O},\text{N},\text{O}'$) Schiff Base Type *N*-(2-Carbamidophenyl)imines: Examples of Exclusively *O*-Silylated Carbamides

Keywords: Chelates / Coordination modes / Tridentate ligands / Silicon

BNPP Hydrolysis Reactions

Hydrolysis reactions of BNPP [sodium bis(*p*-nitrophenyl)phosphate] with trivalent lanthanide (Ln^{3+}) complexes of HEDTA [HEDTA = *N*-hydroxyethyl(ethylenediamine)-*N,N',N'*-triacetate] were studied at pH 6.96–11.34 and 25 °C by a spectrophotometric method and by HPLC analysis.



C. A. Chang*, Y.-P. Chen,
C.-H. Hsiao 1036–1042

Kinetics of Bis(*p*-nitrophenyl)phosphate (BNPP) Hydrolysis Reactions with Trivalent Lanthanide Complexes of *N*-Hydroxyethyl(ethylenediamine)-*N,N',N'*-triacetate (HEDTA)

Keywords: Lanthanides / Hydrolysis / Kinetics / Macrocyclic complexes / Phosphodiester / Reaction mechanisms

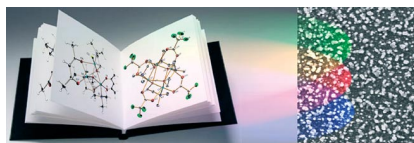
CONTENTS

Copper Cages and Thin Films

M. Shahid, A. A. Tahir, M. Hamid,
M. Mazhar,* M. Zeller, K. C. Molloy,
A. D. Hunter 1043–1050

Copper(II) Oligomeric Derivatives for Deposition of Copper Thin Films

Keywords: Copper / Amino alcohols / Thin films



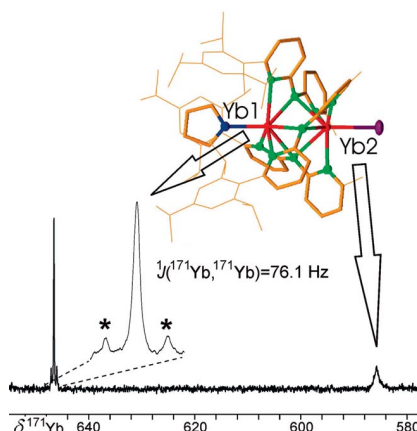
Homobi-, -tri- and -tetranuclear copper(II) oligomeric complexes, $[\text{Cu}(\text{dmap})(\text{OAc})(\text{H}_2\text{O})]_2 \cdot \text{H}_2\text{O}$ (1), $[\text{Cu}_3(\text{dmae})_3(\text{acac})_2\text{Cl}]$ (2) and $[\text{Cu}(\text{dmae})(\text{TFA})]_4$ (3), were prepared and characterized by melting point, elemental analysis, FT-IR, TGA and single-crystal X-ray diffraction. The complexes were used to deposit thin films of pure copper metal by AACVD. The films were characterized by SEM, EDX and XRD.

Multinuclear Lanthanide Complexes

A. M. Dietel, C. Döring, G. Glatz,
M. V. Butovskii, O. Tok,
F. M. Schappacher, R. Pöttgen,
R. Kempe* 1051–1059

Bimetallic Complexes of Ytterbium and Europium Stabilized by Sterically Demanding Dipyritylamides

Keywords: Lanthanides / Europium / Ytterbium / Mössbauer spectroscopy / N ligands / ^{171}Yb NMR spectroscopy



The reaction of the potassium salt of bulky dipyritylamine with $[\text{YbI}_2(\text{thf})_4]$ or with $[\text{EuI}_2(\text{thf})_4]$ afforded novel dinuclear Yb^{II} and Eu^{II} complexes which were structurally characterized by ^{171}Yb NMR and ^{151}Eu Mössbauer spectroscopy. The ligand is highly flexible in its coordination behavior and a variety of bimetallic Yb complexes were isolated and characterized.

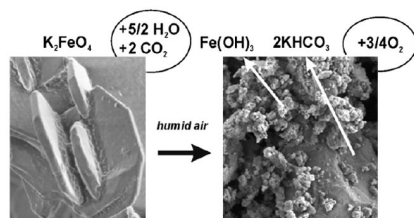
Ferrate Aging

L. Machala, R. Zboril,*
V. K. Sharma, J. Filip,
D. Jancik, Z. Homonnay 1060–1067



Transformation of Solid Potassium Ferrate(VI) (K_2FeO_4): Mechanism and Kinetic Effect of Air Humidity

Keywords: Solid-state reactions / Iron / Reaction mechanisms / Environmental chemistry / Mössbauer spectroscopy



Potassium ferrate(VI) (K_2FeO_4) transforms to iron(III) hydroxide and potassium hydrogen carbonate under humid air conditions. Significant influence of relative air humidity on the aging kinetics of K_2FeO_4 was observed by using in-situ Mössbauer spectroscopy.

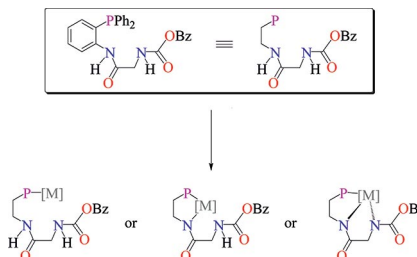
Tridentate Ligand Behaviour

M. R. J. Elsegood, A. J. Lake,
M. B. Smith* 1068–1078



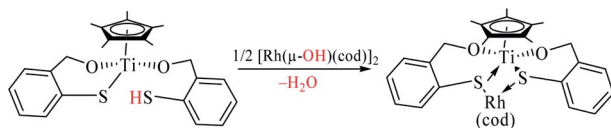
Late Transition-Metal Complexes of 2- $\text{Ph}_2\text{PC}_6\text{H}_4\text{NHC(O)CH}_2\text{NHCO}_2\text{Bz}$: Observation of Three Distinct Ligation Modes ($\kappa^1\text{-P}, \kappa^2\text{-P/N}$ and $\kappa^3\text{-P/N/N'}$)

Keywords: Coordination modes / Metallacycles / P ligands / Late-transition metals



The synthesis of a new hybrid phosphane-bearing phosphorus/nitrogen donor atoms and a coordination study of this ligand are reported. Three coordination modes have been established by spectroscopic and X-ray crystallographic techniques. In the solid state different H-bonding motifs have been observed.

Thiolate Titanoligands



A titanium thiolate–alkoxide complex serves as a heterofunctional metalloligand

for the synthesis of heterometallic derivatives.

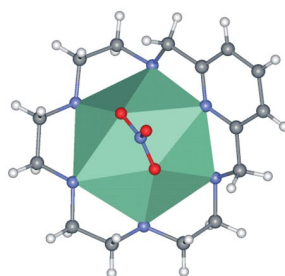
R. Fandos,* A. Otero,* A. Rodríguez,
P. Terreros, G. Aullón,
S. Álvarez 1079–1085

A New Titanium Alkoxide–Thiolate Complex as a Versatile Heterofunctional Metalloligand

Keywords: Heterometallic complexes / Rhodium / Iridium / Titanium / Density functional calculations

Lanthanide Complexes

The structure of a series of structurally rich lanthanide complexes with a hexadentate N₆ ligand containing a pyridine head unit was investigated in the solid state by using X-ray crystallography and in solution by using NMR spectroscopic techniques and DFT calculations performed at the B3LYP level.



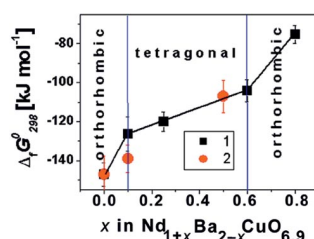
C. Núñez, M. Mato-Iglesias,
R. Bastida, A. Macías,
P. Pérez-Lourido, C. Platas-Iglesias,*
L. Valencia* 1086–1095

Solid-State and Solution Structure of Lanthanide(III) Complexes with a Flexible Py-N₆ Macrocyclic Ligand

Keywords: Lanthanides / Macrocyclic ligands / Density functional calculations / X-ray diffraction

High-Temperature Superconductors

A set of precise and consistent thermodynamic data for Nd_{1+x}Ba_{2-x}Cu₃O_y phases has been obtained by solution calorimetry, adiabatic calorimetry, and methods of estimation of thermodynamic properties. These data were used for the calculation of optimal synthesis conditions (*T*, *p*O₂, ratios of atomic concentrations of elements) for the superconducting phase NdBa₂Cu₃O_{6.9}.



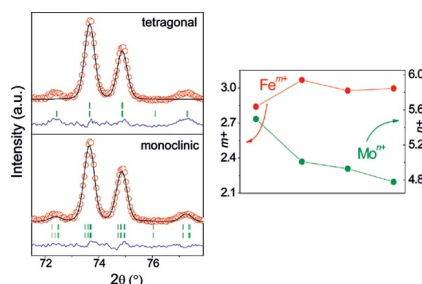
L. N. Zelenina,* T. P. Chusova,
N. I. Matskevich, V. N. Naumov,
Yu. G. Stenin, G. Krabbes 1096–1102

Thermodynamic Properties of Nd_{1+x}Ba_{2-x}Cu₃O_y Compounds and Their Application for Optimizing the Synthesis of Superconducting Materials

Keywords: Calorimetry / Thermodynamics / Heats of formation / Superconductors

Electron-Doped Double Perovskites

Injection of Nd at the Sr sublattice of Sr_{2-x}Nd_xFeMoO₆ double perovskites produces an effective electron doping localized preferentially at Mo sites and promotes an anti-site disorder between Fe and Mo, which creates antiferromagnetic clusters that decrease the saturation magnetization. The abnormal magnetoresistance behaviour observed could be due to the introduction of a magnetic rare earth.



M. Retuerto,* M. J. Martínez-Lope,
M. García-Hernández,
J. A. Alonso 1103–1109

The Magnetotransport Properties and a Neutron Diffraction Study of Sr_{2-x}Nd_xFeMoO₆ Double Perovskites

Keywords: Perovskite phases / Colossal magnetoresistance / Neutron diffraction / Magnetic properties / Doping

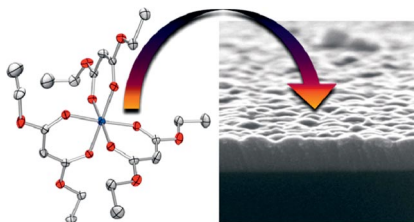
CONTENTS

Chemical Vapour Deposition

M. Hellwig, K. Xu, D. Barreca,
A. Gasparotto, M. Winter, E. Tondello,
R. A. Fischer, A. Devi* 1110–1117

Novel Gallium Complexes with Malonic Diester Anions as Molecular Precursors for the MOCVD of Ga_2O_3 Thin Films

Keywords: Gallium / Chemical vapor deposition / Thin films / Oxides / O ligands



Homoleptic gallium complexes with malonic diester anions $[\text{Ga}(\text{ROCOCHOCOR})_3]$ [$\text{R} = \text{Me}$ (**1**), Et (**2**), $i\text{Pr}$ (**3**), $t\text{Bu}$ (**4**), SiMe_3 (**5**)] are synthesised and characterised with a view to their potential application as Ga MOCVD precursors. Uniform and almost stoichiometric Ga_2O_3 thin films can be formed from **2** as a precursor in a horizontal cold-wall reactor.

* 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 7 were published online on February 17, 2009