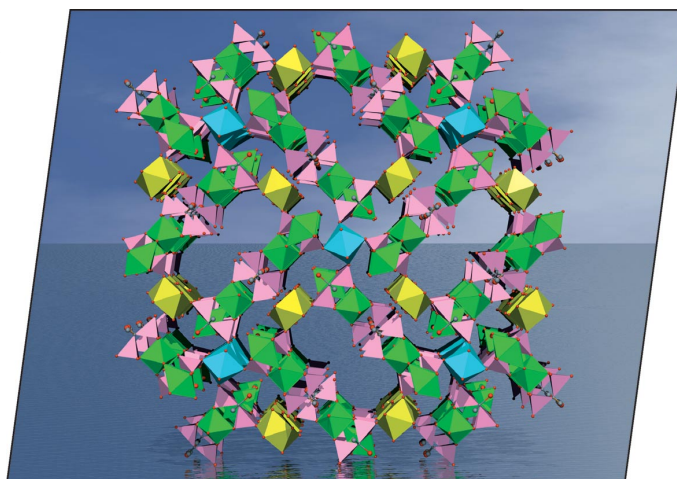




A union formed by chemical societies in Europe (ChemPubSoc Europe) has taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further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

## COVER PICTURE

The cover picture shows the porous mixed-metal anionic MOF isolated from the self-assembly of cyclic trinuclear vanadium-based anionic units with aqua-based lanthanide complexes. The structure contains a three-dimensional channel system filled with water molecules and charge-balancing cations, in which the most prominent channels run parallel to the *c* axis. The material containing  $V^{4+}$  and  $Eu^{3+}$  permits the fine-tuning of the photoluminescence emission from white to purple-blue. Details are discussed in the article by J. Rocha, F. A. Almeida Paz et al. on p. 4931ff.



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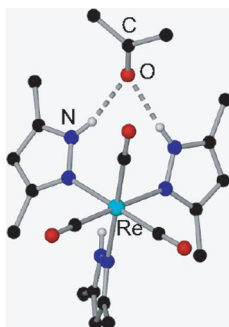
## MICROREVIEW

### Pyrazole Complexes

J. Pérez,\* L. Riera ..... 4913–4925

Pyrazole Complexes and Supramolecular Chemistry

**Keywords:** Supramolecular chemistry / Hydrogen bonds / Coordination modes / N ligands / Pyrazoles



Complexes of N–H pyrazoles have a rich and varied supramolecular chemistry in which the formation of intra- and intermolecular hydrogen bonds is a major theme. These complexes can be used as precursors for polymetallic species, liquid crystals, self-assembled structures, and receptors for anions.

## SHORT COMMUNICATION

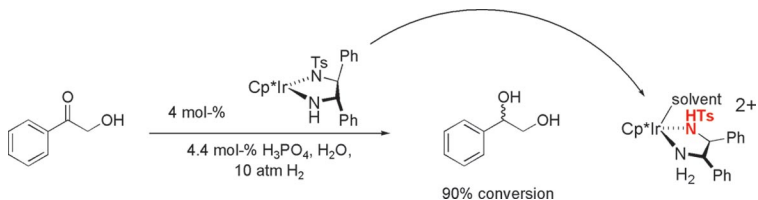
### Hydrogenation in Water

C. S. Letko, Z. M. Heiden,  
T. B. Rauchfuss\* ..... 4927–4930



Activation and Deactivation of Cp\*Ir(TsDPEN) Hydrogenation Catalysts in Water

**Keywords:** Homogeneous catalysis / Aqueous catalysis / Catalyst degradation / Hydrogenation / Hydrides



[Cp\*Ir(TsDPEN)]H<sub>2</sub>PO<sub>4</sub> has been found to be an active hydrogenation catalyst for the conversion of aromatic ketones to alcohols in aqueous solution. The pathway for

degradation involves protonation of the tosylamide. The intermediate [Cp\*Ir(NCMe)(HTsDPEN)]<sup>2+</sup> has been structurally characterized.

## FULL PAPERS

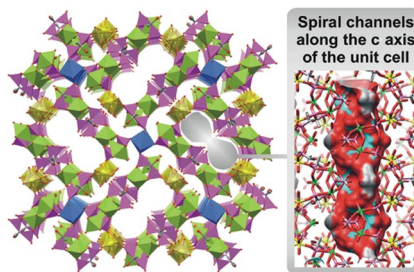
### Microporous MOFs

J. Rocha,\* F. A. Almeida Paz,\* F.-N. Shi,  
R. A. S. Ferreira, T. Trindade,  
L. D. Carlos ..... 4931–4945



Photoluminescent Porous Modular Lanthanide–Vanadium–Organic Frameworks

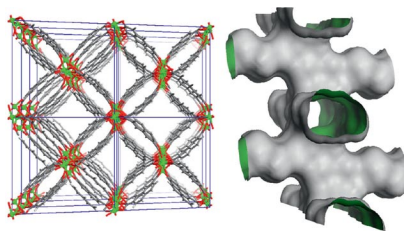
**Keywords:** Metal–organic frameworks / Secondary building units / Self-assembly / Luminescence



Porous mixed-metal MOFs based on the self-assembly of cyclic trinuclear vanadium-based anionic units with cationic aqua-based lanthanide complexes are easily isolated either by facile one-pot synthesis or by slow evaporation. The co-existence of V<sup>4+</sup> and Eu<sup>3+</sup> in the same material permits the fine tuning of the photoluminescence emission from white to the purplish-blue.

## Gas Sorption in Microporous MOFs

A microporous metal–organic framework based on infinite chains of  $\text{Zn}^{2+}$  ions bridged by 2,7-naphthalenedicarboxylate shows unexpected gas sorption behavior typical for mesoporous materials as a result of the unique physical environment of the pores.



J. Seo, H. Chun\* ..... 4946–4949

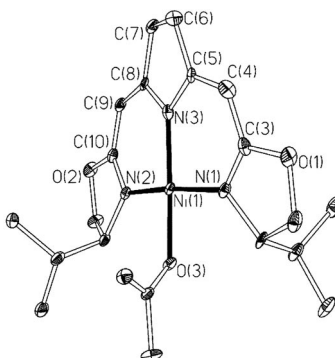
Hysteretic Gas Sorption in a Microporous Metal–Organic Framework with Nonintersecting 3D Channels



**Keywords:** Metal-organic frameworks / Coordination polymers / Adsorption / Microporous materials

## Intraligand Rearrangements

Bis(oxazolinylmethyl) and related ligands coordinate meridionally to transition metals. Intraligand rearrangements in bis(oxazolinylmethyl)pyrroles, which are protolytically induced, lead to the formation of stable planar complex structures.



F. Konrad, J. Lloret Fillol, C. Rettenmeier, H. Wadepohl, L. H. Gade\* .... 4950–4961

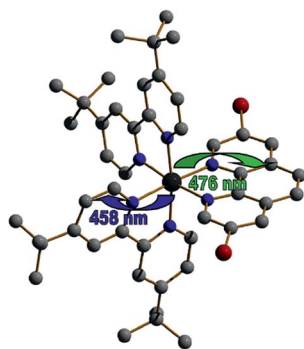
Bis(oxazolinylmethyl) Derivatives of  $\text{C}_4\text{H}_4\text{E}$  Heterocycles (E = NH, O, S) as  $\text{C}_2$ -Chiral Meridionally Coordinating Ligands for Nickel and Chromium



**Keywords:** N ligands / Chirality / Nickel / Chromium / Structure elucidation

## Ruthenium Phenanthrolines

A series of novel 3,8-disubstituted phenanthroline ruthenium complexes is presented. A detailed spectroscopic investigation of the absorption properties of the 3,8-dibromo-1,10-phenanthroline ruthenium complex by using resonance Raman spectroscopy reveals that the lowest-energy  $^1\text{MLCT}$  state is predominantly located on the substituted phenanthroline for low-energy excitation.



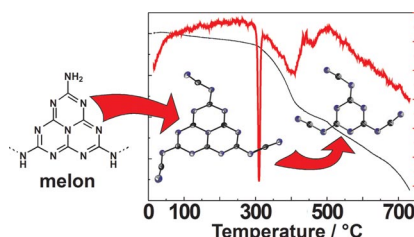
M. Karnahl, S. Kriek, H. Görls, S. Tschierlei, M. Schmitt, J. Popp,\* D. Chartrand, G. S. Hanan, R. Groarke, J. G. Vos, S. Rau\* ..... 4962–4971

Synthesis and Photophysical Properties of 3,8-Disubstituted 1,10-Phenanthrolines and Their Ruthenium(II) Complexes

**Keywords:** Phenanthroline / Ruthenium / Pd catalysis / Luminescence / Resonance Raman spectroscopy

## Carbon Nitride Precursors

The synthesis of melonates by reaction of the polymer melon with  $\text{KSCN}$  melts was advanced by variation of the melts and studied by using thermal analysis. We report the first synthesis of melonates from cyanate melts as well as a subsequent degradation reaction leading to tricyanomelaminates. We also describe facile access to sodium melonate and potassium tricyanomelaminates.



A. Sattler, W. Schnick\* ..... 4972–4981

On the Formation and Decomposition of the Melonate Ion in Cyanate and Thiocyanate Melts and the Crystal Structure of Potassium Melonate,  $\text{K}_3[\text{C}_6\text{N}_7(\text{NCN})_3]$



**Keywords:** Nitrogen heterocycles / Thermal analysis / Structure elucidation / Reactions mechanisms

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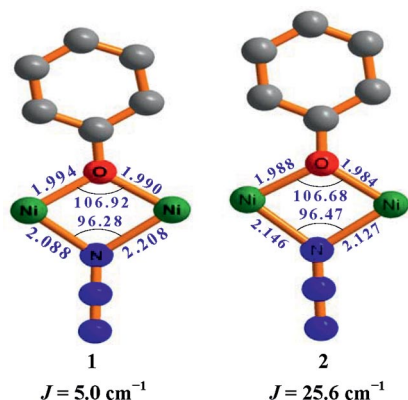
## Magnetic Exchange Interactions

R. Koner, S. Hazra, M. Fleck, A. Jana,  
C. R. Lucas,\* S. Mohanta\* ..... 4982–4988



Magnetic and Electrochemical Properties of a Heterobridged  $\mu$ -Phenoxido- $\mu_{1,1}$ -Azide Dinickel(II) Compound: A Unique Example Demonstrating the Bridge Distance Dependency of Exchange Integral

**Keywords:** Magnetic properties / Exchange interactions / Nickel / Schiff bases / Electrochemistry / Azides



A heterobridged  $\mu$ -phenoxido- $\mu_{1,1}$ -azide dinickel(II) compound  $[\text{Ni}^{\text{II}}_2(\text{HL}^1)_3(\mu_{1,1}\text{-N}_3)] \cdot 3\text{H}_2\text{O}$  (**1**) derived from the tetradentate Schiff base ligand *N*-(2-hydroxyethyl)-3-methoxysalicylaldehyde ( $\text{H}_2\text{L}^1$ ) was prepared. A unique example of the dependence of strength of magnetic exchange interaction on the metal–ligand bridge distance was found.

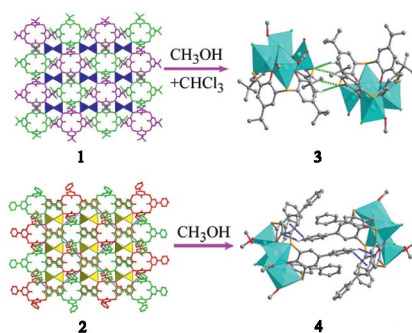
## Thiacalix[4]arene-Based Compounds

Y. Bi, W. Liao,\* X. Wang, R. Deng,  
H. Zhang\* ..... 4989–4994



Self-Assembly from Two-Dimensional Layered Networks to Tetranuclear Structures: Syntheses, Structures, and Properties of Four Copper–Thiacalix[4]arene Compounds

**Keywords:** Calixarenes / Copper / Cluster chemistry / Solvothermal synthesis / Self-assembly



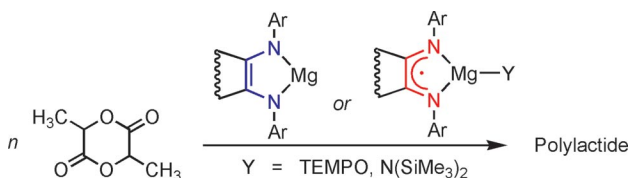
Two 2D  $\text{Cu}^{\text{I}}$ –thiacalix[4]arene compounds were synthesized by the solvothermal method and reassembled in air at room temperature to form two tetranuclear structures of  $\text{Cu}^{\text{II}}$ . The thiacalix[4]arene ligands in all these four compounds adopt the cone conformation.

## Lactide Polymerization

I. L. Fedushkin,\* A. G. Morozov,  
V. A. Chudakova, G. K. Fukin,  
V. K. Cherkasov ..... 4995–5003

Magnesium(II) Complexes of the dpp-BIAN Radical-Anion: Synthesis, Molecular Structure, and Catalytic Activity in Lactide Polymerization

**Keywords:** Magnesium / Redox chemistry / Structure elucidation / Polymerization



The use of acenaphthene-1,2-diimine as ancillary ligand allowed preparation of monomeric magnesium complexes with terminal nitroxide, amide, and keteniminate

groups. The synthesized complexes proved to be very active catalysts for the ring-opening polymerization of lactides in solution as well as in the melt of monomer.

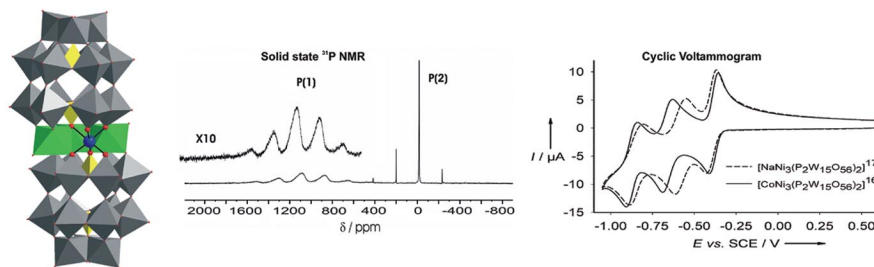
## Dawson Sandwich Complexes

D. Schaming, J. Canny, K. Boubekeur,  
R. Thouvenot,\*  
L. Ruhlmann\* ..... 5004–5009



An Unprecedented Trinuclear Dawson Sandwich Complex with Internal Lacuna: Synthesis and  $^{31}\text{P}$  NMR Spectroscopic Analysis of the Symmetrical  $[\text{NaNi}_3(\text{H}_2\text{-O})_2(\text{P}_2\text{W}_{15}\text{O}_{56})_2]^{17-}$  and  $[\text{CoNi}_3(\text{H}_2\text{-O})_2(\text{P}_2\text{W}_{15}\text{O}_{56})_2]^{16-}$  Anions

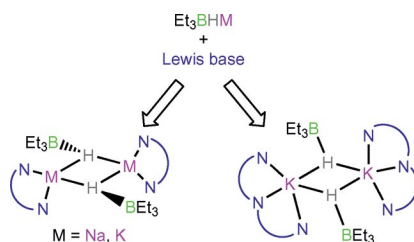
**Keywords:** Polyoxometalates / Sandwich complexes / Mixed Dawson complexes / Electrochemistry / Paramagnetic  $^{31}\text{P}$  NMR spectroscopy



The present work reports on the synthesis and characterization of the Dawson sandwich complexes  $[\text{NaNi}_3(\text{H}_2\text{O})_2(\text{P}_2\text{W}_{15}\text{-O}_{56})_2]^{17-}$  and  $[\text{CoNi}_3(\text{H}_2\text{O})_2(\text{P}_2\text{W}_{15}\text{-O}_{56})_2]^{16-}$ ; their electrochemical behaviour is also reported.



$\text{Et}_3\text{BHM}$  ( $M = \text{Li}, \text{Na}, \text{K}$ ) was treated with polydentate donors ( $L$ ) to give a variety of ion-separated and ion-bonded dimers. For  $M = \text{Li}$ ,  $L = \text{TMEDA}$  ion separation and the formation of  $[\text{Et}_3\text{BH}]^-[ \text{Li} \cdot 2\text{TMEDA} ]^+$  is noted. In contrast, for  $M = \text{Na}, \text{K}$  and  $L = \text{TMEDA}$ , PMDETA isostructural  $(\text{Et}_3\text{BHM} \cdot L)_2$  dimers are formed based on  $M_2H_2$  cores incorporating pyramidalized bridging hydrides. Solution data point to dimer retention in non-polar solvents.



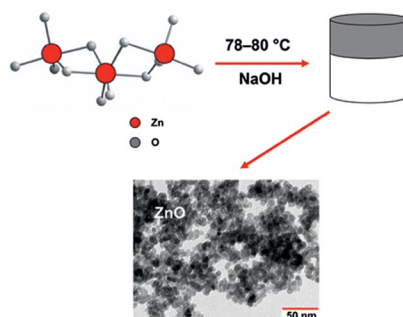
**J. Haywood,**  
**A. E. H. Wheatley\*** ..... 5010–5016

Metal-Hydride Bonding in Higher Alkali  
Metal Boron Monohydrides

**Keywords:** Alkali metals / Bridging ligands /  
Hydrides / Reducing agents

## ZnO Colloids

A facile and reproducible route to nano-structured colloidal ZnO nanoparticles (6–10 nm) was developed by controlled hydrolysis and condensation of zinc acetylacetonate in alkaline conditions.



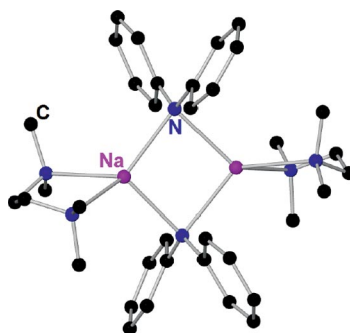
**A. Famengo, S. Anantharaman, G. Ischia,**  
**V. Causin, M. M. Natile, C. Maccato,**  
**E. Tondello, H. Bertagnolli,**  
**S. Gross\*** ..... 5017–5028

Facile and Reproducible Synthesis of  
Nanostructured Colloidal ZnO Nanopar-  
ticles from Zinc Acetylacetonate: Effect of  
Experimental Parameters and Mechanistic  
Investigations

**Keywords:** Zinc oxide / Nanostructures /  
Colloids / Hydrolysis

## Alkali Metal Amides

Three new tmeda complexes of lithium, sodium and potassium diphenylamide have been prepared and characterised in both, solution and solid state. The sodium complex is the first structurally characterised homometallic diphenylamide complex of this particular metal.

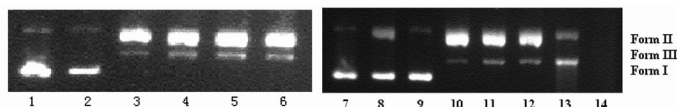


**A. R. Kennedy, J. Klett, C. T. O'Hara,\***  
**R. E. Mulvey,**  
**G. M. Robertson** ..... 5029–5035

Structural Elucidation of tmeda-Solvated  
Alkali Metal Diphenylamide Complexes

**Keywords:** Alkali metals / Amides / N  
ligands / NMR spectroscopy / Structure  
elucidation

## Oxidative DNA Cleavage



Two novel 1,2,4-triazole-based copper(II) complexes display efficient oxidative cleavage of supercoiled DNA. The rate con-

stants for the conversions of supercoiled to nicked DNA are  $4.38 \times 10^{-4} \text{ s}^{-1}$  (for 1) and  $5.26 \times 10^{-4} \text{ s}^{-1}$  (for 2).

**D.-D. Li, J.-L. Tian,\* W. Gu, X. Liu,**  
**S.-P. Yan\*** ..... 5036–5045

Synthesis, X-ray Crystal Structures, DNA  
Binding and Nuclease Activities of Two  
Novel 1,2,4-Triazole-Based  $\text{Cu}^{\text{II}}$  Com-  
plexes

**Keywords:** DNA cleavage / DNA oxi-  
dation / Copper

\* Author to whom correspondence should be addressed.

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