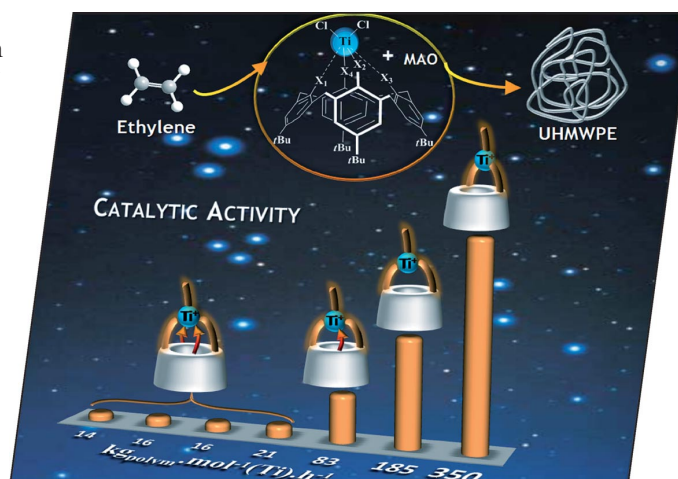


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## COVER PICTURE

The cover picture shows that improved titanium catalysts based on calixarene ligands can display high activity for the production of ultra-high-molecular-weight polyethylene (UHMWPE). Both the coordination mode of the titanium and the conformation of the calixarene ligand have been found to be significant for the catalytic performance. Details are discussed in the article by M. Taoufik, I. Bonnamour et al. on p. 1349 ff.



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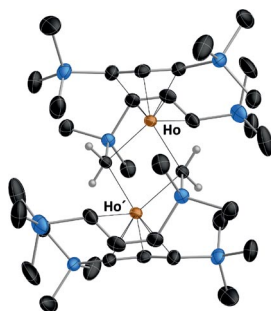
## MICROREVIEW

### Allyl Complexes

S. C. Chmely, T. P. Hanusa\* ... 1321–1337

Complexes with Sterically Bulky Allyl Ligands: Insights into Structure and Bonding

**Keywords:** Solid-state structures / Main group elements / Transition metals / Allyl complexes / Steric bulk



Sterically bulky substituents on allyl ligands can dramatically enhance the thermal and kinetic stability of their associated metal complexes. Compounds with such ligands display a wide range of monomeric, oligomeric, and polymeric structures, and research in this area is greatly expanding the range of bonding types and associated reactions that can be incorporated into metal allyl chemistry.

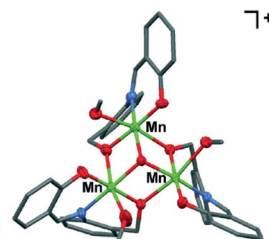
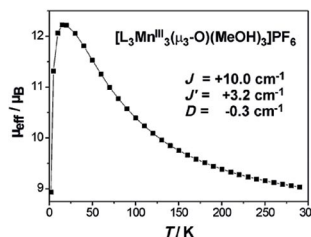
## SHORT COMMUNICATIONS

### Molecular Magnetism

P. Chaudhuri,\* R. Wagner,  
T. Weyhermüller ..... 1339–1342

An Oximate-Free Ferromagnetically Coupled Triangular  $[\text{Mn}^{\text{III}}_3(\mu_3\text{-O})]^{7+}$  Core

**Keywords:** Manganese / Schiff bases / Magnetic properties / Ferromagnetism



Magnetic properties of the alkoxo-bridged trinuclear complex  $[\text{L}_3\text{Mn}^{\text{III}}_3(\mu_3\text{-O})(\text{MeOH})_3]\text{PF}_6$  are investigated. The compound is ferromagnetically coupled yield-

ing an  $S_{\text{t}} = 6$  spin ground state and is a very rare example of an oximate-free ferromagnetic manganese(III) complex containing the  $[\text{Mn}^{\text{III}}_3\text{O}]^{7+}$  core.

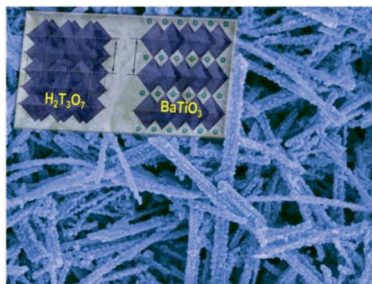
### Barium Titanate Nanostructures

D. K. Lee, I.-S. Cho, S. Lee, D. H. Kim,  
H.-W. Shim, D.-W. Kim,\*  
K. S. Hong\* ..... 1343–1347

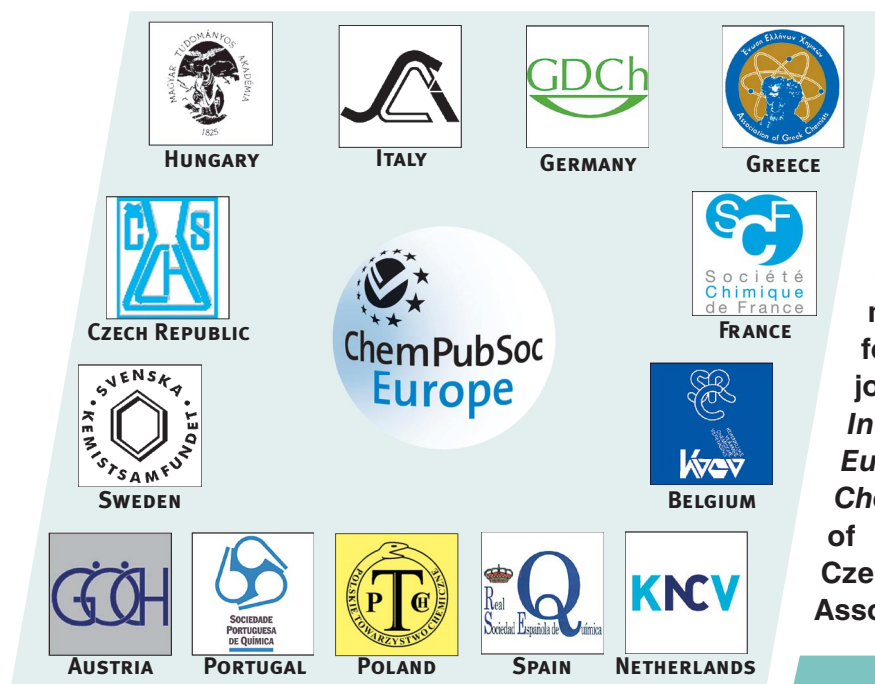


Low-Temperature Synthesis of Phase-Pure 0D–1D  $\text{BaTiO}_3$  Nanostructures Using  $\text{H}_2\text{Ti}_3\text{O}_7$  Templates

**Keywords:** Barium / Nanostructures / Perovskite phases / Template synthesis / Titanates / Solvent effects



0D–1D  $\text{BaTiO}_3$  nanostructures with perovskite structure were synthesized by using  $\text{H}_2\text{Ti}_3\text{O}_7$  nanowire templates under low-temperature (80 °C) solvothermal conditions in an ethanol/water mixed solution.

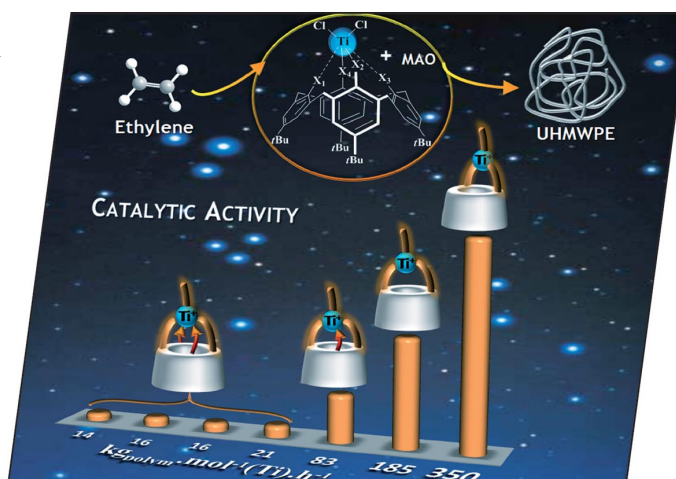


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Other ChemPubSoc Europe journals are *Chemistry – A European Journal*, *ChemBioChem*, *ChemPhysChem*, *ChemMedChem*, *ChemSusChem* and *ChemCatChem*.

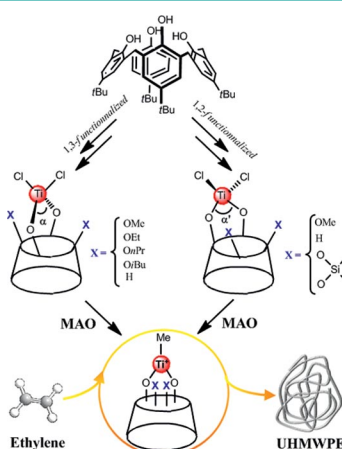
## COVER PICTURE

The cover picture shows that improved titanium catalysts based on calixarene ligands can display high activity for the production of ultra-high-molecular-weight polyethylene (UHMWPE). Both the coordination mode of the titanium and the conformation of the calixarene ligand have been found to be significant for the catalytic performance. Details are discussed in the article by M. Taoufik, I. Bonnamour et al. on p. 1349 ff.




## FULL PAPERS

Titanium catalysts based on calixarene ligands have been prepared and screened for their performance as ethylene polymerisation catalysts. Upon methylaluminoxane (MAO) activation, some of these systems displayed high activity for the production of high-density polyethylene. Both the Ti coordination mode and the ligand conformation have been found to be significant for the catalytic performance.



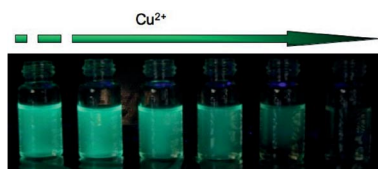
### Catalysts with Tunable Structure

**J. Espinas, U. Darbost, J. Pelletier,**  
**E. Jeanneau, C. Duchamp, F. Bayard,**  
**O. Boyron, J. -P. Broyer, J. Thivolle-Cazat,**  
**J. -M. Basset, M. Taoufik,\***  
**I. Bonnamour\* ..... 1349–1359**

Titanacalixarenes in Homogeneous Catalysis: Synthesis, Conformation and Catalytic Activity in Ethylene Polymerisation 


**Keywords:** Calixarenes / Titanium / Ethylene / Polymerization / Homogeneous catalysis

A new molecular probe for the optical detection of  $\text{Cu}^{\text{II}}$  ions is described. The molecule can be used as a chemodosimeter to estimate the concentration of  $\text{Cu}^{\text{II}}$  ions in solution either by UV/Vis or photoluminescence spectroscopy.



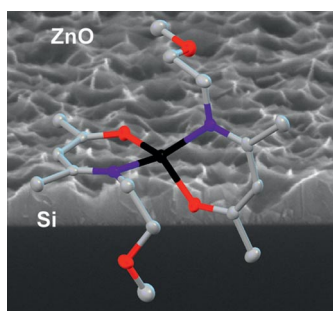
### Sensors

**A. Reynal, J. Etxebarria, N. Nieto,**  
**S. Serres, E. Palomares,\***  
**A. Vidal-Ferran\* ..... 1360–1365**

A Bipyridine-Based “Naked-Eye” Fluorimetric  $\text{Cu}^{2+}$  Chemosensor 


**Keywords:** Bipyridine / Sensors / Copper / Luminescence / Absorbance

Two new bis(ketoiminato)zinc precursors for the growth of zinc oxide thin films were developed and evaluated for their use in chemical vapor deposition processes. Stoichiometric ZnO thin films with a preferred orientation were grown on Si(100) substrates.



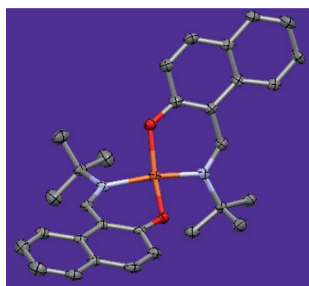
### Zinc Oxide Thin Films

**D. Bekermann, D. Rogalla, H.-W. Becker,**  
**M. Winter, R. A. Fischer,**  
**A. Devi\* ..... 1366–1372**

Volatile, Monomeric, and Fluorine-Free Precursors for the Metal Organic Chemical Vapor Deposition of Zinc Oxide 

**Keywords:** Zinc oxide / Ketoiminato ligands / Chemical vapor deposition / Thin films

Stereochemical differences between the solid and solution state structures for bis(*N*-alkyl-2-oxy-1-naphthaldiminato)copper(II) complexes are correlated to the  $\text{Cu}^{\text{II}}/\text{Cu}^{\text{I}}$  potential.



### Substituent Effects in Cu Complexes

**M. Villagrán, F. Caruso, M. Rossi,**  
**J. H. Zagal,**  
**J. Costamagna\* ..... 1373–1380**

Substituent Effects on Structural, Electronic, and Redox Properties of Bis(*N*-alkyl-2-oxy-1-naphthaldiminato)copper(II) Complexes Revisited – Inequivalence in Solid- and Solution-State Structures by Electronic Spectroscopy and X-ray Diffraction Explained by DFT

**Keywords:** Naphthaldiminate ligands / Stereochemistry / Cyclic voltammetry / Copper / Substituent effects / Density functional calculations



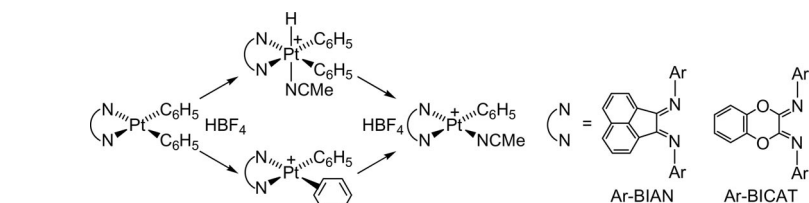
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## Platinum Arene Complexes

J. Parmene, A. Krivokapic,  
M. Tilset\* ..... 1381–1394

Synthesis, Characterization, and Protonation Reactions of Ar-BIAN and Ar-BICAT Diimine Platinum Diphenyl Complexes

**Keywords:** Platinum / Hydride ligands / Arene ligands / N ligands / C–H



The nature of the N–N ligand has clear influences on the structural and spectroscopic characteristics of the Pt complexes. The rates of protonation and benzene eli-

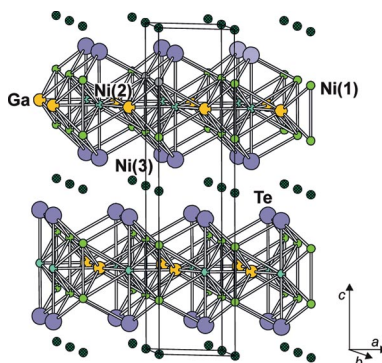
mination starting from the new (N–N)-PtPh<sub>2</sub> complexes strongly depend on the identity of the N–N ligand.

## Mixed Tellurides

A. A. Isaeva,\* O. N. Makarevich,  
A. N. Kuznetsov, T. Doert,  
A. M. Abakumov,  
G. Van Tendeloo ..... 1395–1404

Mixed Tellurides Ni<sub>3–x</sub>GaTe<sub>2</sub> (0 ≤ x ≤ 0.65): Crystal and Electronic Structures, Properties, and Nickel Deficiency Effects on Vacancy Ordering

**Keywords:** Nickel chalcogenides / Subvalent compounds / Electron microscopy / NiAs derivatives / Layered compounds



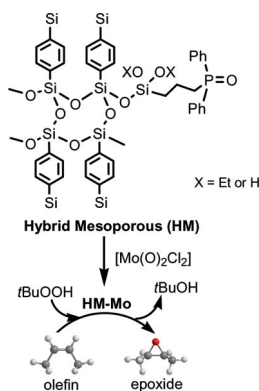
The NiAs-derivative crystal structure of mixed tellurides Ni<sub>3–x</sub>GaTe<sub>2</sub> (0 ≤ x ≤ 0.65) hosts a variable content of Ni atoms in 2D heterometallic Ni/Ga slabs and Te-confined van der Waals gaps. At low values of Ni content, x < 0.5, the extra Ni atoms arrange in a superstructural ordered fashion aimed to relax the structural strain between the occupied and vacant sites in the *ab* plane.

## Nanostructured Epoxidation Catalyst

A. Castro, J. C. Alonso, A. A. Valente,\*  
P. Neves, P. Brandão, V. Félix,  
P. Ferreira\* ..... 1405–1412

Nanostructured Dioxomolybdenum(VI) Catalyst for the Liquid-Phase Epoxidation of Olefins

**Keywords:** Molybdenum / Mesoporous materials / Heterogeneous catalysis / Epoxidation



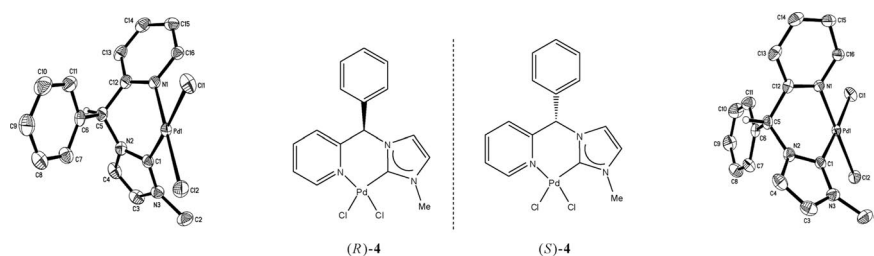
A benzenosilica hybrid mesoporous material containing phosphane oxide surface groups (HM), prepared via the “dual” organosilane templated co-condensation method, was used as an effective catalyst support for [Mo(O)<sub>2</sub>Cl<sub>2</sub>] (HM-Mo). The catalyst is active and selective in the liquid-phase epoxidation of olefins with *t*BuOOH.

## Chiral NHC-Palladacycle

M. Chiang, Y. Li, D. Krishnan, P. Sumod,  
K. H. Ng, P.-H. Leung\* ..... 1413–1418

Synthesis and Characterisation of a Novel Chiral Bidentate Pyridine-N-Heterocyclic Carbene-Based Palladacycle

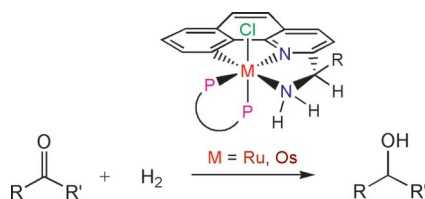
**Keywords:** Carbene ligands / Nitrogen heterocycles / Palladium / Optical resolution



We have successfully prepared a novel chiral pyridine-NHC-based palladacycle via the optical resolution of its amino acid ad-

duct. This method provides a simple and efficient route towards the synthesis of chiral bidentate NHC-based pallacycles.

Ru and Os complexes [MX(CN'N)(PP)] {M = Ru, Os; X = Cl, OCH(*p*-C<sub>6</sub>H<sub>4</sub>F)<sub>2</sub>; PP = dppb, (*S,R*)-Josiphos} efficiently catalyze the hydrogenation (5 atm) of ketones to secondary alcohols in methanol or methanol/ethanol mixtures and in the presence of KO<sup>t</sup>Bu with a S/C ratio of 10000–50000. Josiphos diphosphanes reduce alkyl aryl ketones with *ee* values up to 99% and turnover frequencies up to 5.6 × 10<sup>4</sup> h<sup>−1</sup>.



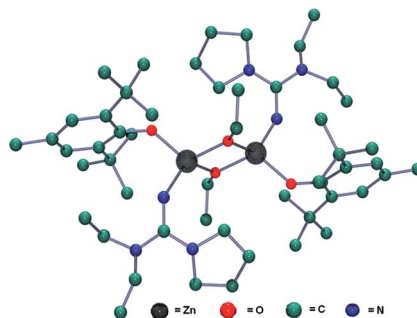
**W. Baratta,\* L. Fanfoni, S. Magnolia,  
K. Siega, P. Rigo ..... 1419–1423**

Benzo[*h*]quinoline Pincer Ruthenium and Osmium Catalysts for Hydrogenation of Ketones

**Keywords:** Asymmetric catalysis / Hydrogenation / Ketones / Phosphane ligands / Osmium / Ruthenium

## Zinc Aryloxides

Six 1,1,3,3-tetraalkylguanidine (H-TAG) solvated zinc aryloxides have been synthesized and characterized for use as precatalysts for the ring-opening polymerization of *rac*-lactide.



**J. J. Ng, C. B. Durr, J. M. Lance,  
S. D. Bunge\* ..... 1424–1430**

A Family of 1,1,3,3-Tetraalkylguanidine (H-TAG) Solvated Zinc Aryloxide Precatalysts for the Ring-Opening Polymerization of *rac*-Lactide

**Keywords:** Guanidine / Polymerization / Zinc / Catalysts / Aryl oxide

\* Author to whom correspondence should be addressed.

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