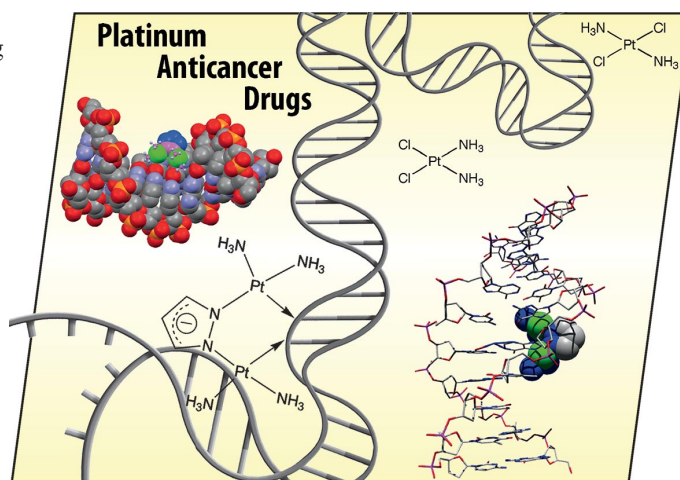




A union formed by chemical societies in Europe (ChemPubSoc Europe) has taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further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

## COVER PICTURE

The cover picture shows an impression of the binding of dinuclear platinum compounds to double-stranded DNA. Details are presented in the Microreview by J. Reedijk on p. 1303ff.



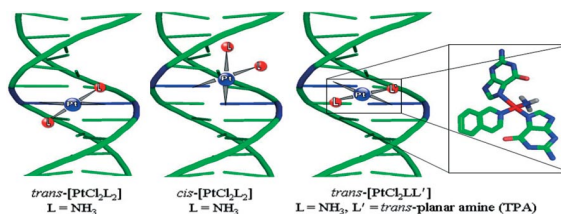
## MICROREVIEWS

### *trans*-Platinum Antitumor Agents

S. M. Aris, N. P. Farrell\* ..... 1293–1302

Towards Antitumor Active *trans*-Platinum Compounds

**Keywords:** Platinum / Structure–activity relationships / DNA damage / Antitumor agents / Drug design



This microreview summarizes the chemistry and biology of *trans*-platinum compounds containing principally planar amines and succinctly reviews the current status of anticancer relevance of the *trans*-

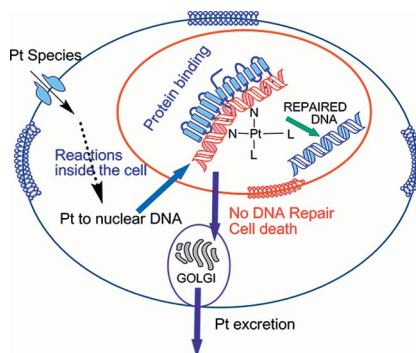
platinum geometry. The potential for novel bifunctional DNA–DNA and DNA–protein adduct formation and their relevance to antitumor activity is succinctly discussed.

### Platinum Anticancer Chemistry

J. Reedijk\* ..... 1303–1312

Platinum Anticancer Coordination Compounds: Study of DNA Binding Inspires New Drug Design

**Keywords:** Antitumor agents / Cisplatin / Medicinal chemistry / Platinum / Bioinorganic chemistry / Nucleic acids

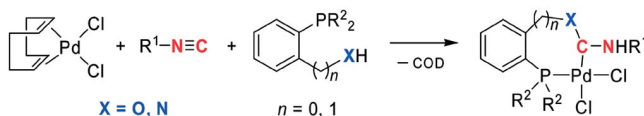


The chemistry of platinum anticancer drugs and their binding with nucleic acids is discussed in detail. From mechanistic knowledge at the molecular level, like DNA binding, new drug candidates are discussed. Design and synthesis of new compounds is focused on their bifunctionality. Several biochemical and biophysical studies are reviewed as well.

## SHORT COMMUNICATIONS

### (Phosphanyl-carbene) Pd Complexes

M. R. Eberhard, B. van Vliet,  
L. Durán Páchon, G. Rothenberg,  
G. Eastham, H. Kooijman, A. L. Spek,  
C. J. Elsevier\* ..... 1313–1316

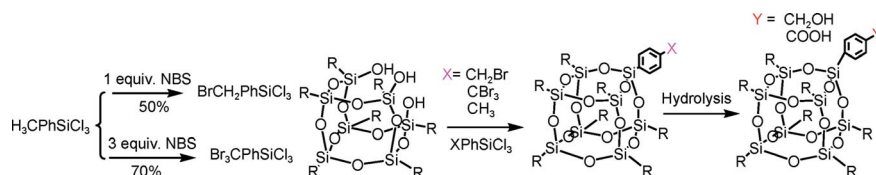


A Simple Building-Block Route to (Phosphanyl-carbene)palladium Complexes via Intermolecular Addition of Functionalised Phosphanes to Isocyanides

**Keywords:** Carbenes / Carbene complexes / Palladium / Intermolecular addition

A simple modular synthesis of (phosphanyl-carbene)Pd complexes is presented. This building-block approach to a range of Pd pre-catalysts containing a 'sticky' carbene moiety and a hemi-labile phosphane ligand avoids the synthesis of imidazolium

salts or free carbenes. The design involves a new intermolecular addition of the polar head group of a readily available phosphane-alcohol or -amine to a Pd-coordinated isocyanide.



An effective and milder route to organo-functional trichlorosilanes is reported: mono- and tribrominated trichloro(*p*-tolyl)-silane can be selectively prepared by controlling the ratio of *N*-bromosuccinimide

(NBS) to trichloro(*p*-tolyl)silane. From these compounds, several monofunctionalized octasilsesquioxanes ( $T_8$ ) are obtained, which are very useful precursors for the preparation of new materials.

H. Liu,\* S. Kondo, N. Takeda,  
M. Unno\* ..... 1317–1319

An Efficient Approach to Monophenyl-Functionalized Octasilsesquioxanes

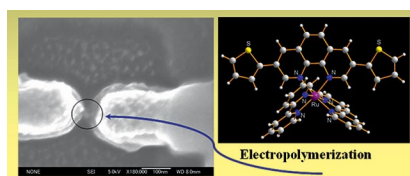


**Keywords:** Functionalization / Bromination / Cage silsesquioxanes / Synthesis design

## FULL PAPERS

### Electropolymerization

The formation of an oligothiophene polymer bridging gold electrodes with a gap of around 25 nm by in situ electropolymerization, and its removal, is studied by SEM and temperature-dependent electrochemical techniques ( $I-V$  curves).

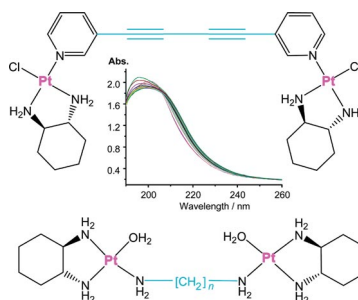


W. Huang,\* L. Wang, H. Tanaka,  
T. Ogawa\* ..... 1321–1330

Spectral, Structural, and Computational Studies of a New Family of Ruthenium(II) Complexes Containing Substituted 1,10-Phenanthroline Ligands and in situ Electropolymerization of a Phenanthroline-ruthenium(II) Complex Bridging Nanogap Gold Electrodes

**Keywords:** Ruthenium / N ligands / Electrochemistry / Electropolymerization / Thin films / Density functional calculations

The influence of different types of bridging ligands on the thermodynamic and kinetic properties of dinuclear  $Pt^{II}$  complexes was investigated for this study. The distance between the  $Pt^{II}$  centres and the electron acceptor/donor ability of the bridging ligand have proven to be the crucial factors.



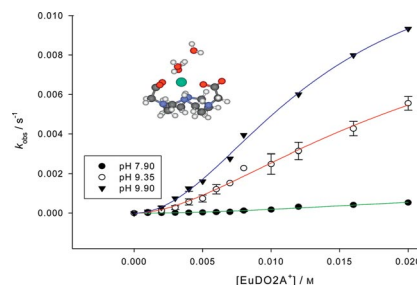
### Dinuclear Platinum Complexes

H. Ertürk, R. Puchta,  
R. van Eldik\* ..... 1331–1338

Synthesis, Characterization, Thermodynamic and Kinetic Properties of a New Series of Dinuclear  $Pt^{II}$  Complexes

**Keywords:** Platinum / Antitumor agents / Kinetics

A detailed analysis of the BNPP phosphodiester bond hydrolysis rate constants data vs. lanthanide complex concentration at pH 7.90, 9.35, and 9.90 indicates that dimeric species are more reactive than their monomeric analogues. The overall formation constants for the (Ln-dimer)-BNPP species are about  $10^4 M^{-1}$  and the hydrolysis reactivities are in the order  $Eu > Yb > Er$ .



### Kinetics of Macrocyclic Ln Complexes

C. A. Chang,\* B. H. Wu,  
C.-H. Hsiao ..... 1339–1346

Effects of Concentration of Some Lanthanide(III) Complexes of 1,7-Bis(carboxymethyl)-1,4,7,10-tetraazacyclododecane on Bis(*p*-nitrophenyl)phosphate Hydrolysis

**Keywords:** Lanthanides / Macrocyclic ligands / Phosphodiester / Hydrolysis / Kinetics / Reaction mechanisms

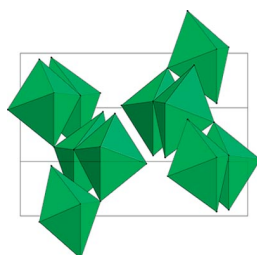
# CONTENTS

## Cu/ZnO Catalyst Precursors

M. Behrens,\* F. Girgsdies, A. Trunschke,  
R. Schlögl ..... 1347–1357

Minerals as Model Compounds for Cu/  
ZnO Catalyst Precursors: Structural and  
Thermal Properties and IR Spectra of Min-  
eral and Synthetic (Zincian) Malachite,  
Rosasite and Aurichalcite and a Catalyst  
Precursor Mixture

**Keywords:** Copper / Zinc / Heterogeneous  
catalysis / X-ray diffraction / Thermochem-  
istry



Minerals, single-phase synthetic samples  
and a typical phase mixture employed as a  
precursor for Cu/ZnO catalysts are com-  
pared and their structural, thermal and IR  
spectroscopic properties studied. A com-  
prehensive characterisation of this phase  
mixture is attempted, and the implications  
of the precursor chemistry (phase compo-  
sition, Cu/Zn ratio) on the final catalyst  
are discussed

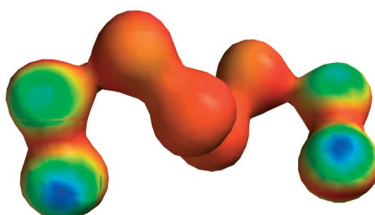
## Sulfur–Sulfur Bond Energies

M. K. Denk\* ..... 1358–1368



The Variable Strength of the Sulfur–Sulfur  
Bond: 78 to 41 kcal – G3, CBS-Q, and  
DFT Bond Energies of Sulfur (S<sub>8</sub>) and  
Diklfanes XSSX (X = H, F, Cl, CH<sub>3</sub>, CN,  
NH<sub>2</sub>, OH, SH)

**Keywords:** Sulfur / Radicals / Density func-  
tional calculations / Thermochemistry /  
Bond order / Spin density



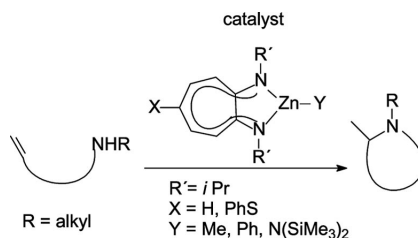
High-precision thermochemical calcu-  
lations (G3, CBS-Q) and DFT methods  
were employed to establish the strength of  
the sulfur–sulfur bond. The delocalization  
of the spin density in the “S–S<sub>6</sub>–S” diradical  
at the B3LYP/6-311G(2d,p) level is shown  
in the graphic.

## Hydroamination

K. Löhnwitz, M. J. Molski, A. Lühl,  
P. W. Roesky,\* M. Dochnahl,  
S. Blechert\* ..... 1369–1375

Aminotroponiminate Zinc Complexes with  
Different Leaving Groups as Catalysts for  
the Intramolecular Hydroamination of Al-  
kenes

**Keywords:** Homogeneous catalysis /  
Heterocycles / Hydroamination / N li-  
gands / Zinc / Organozinc compounds



Six different (aminotroponiminate)phenyl-  
zinc and bis(trimethylsilyl)amido com-  
plexes were prepared and fully charac-  
terized. The new complexes were compared  
with the corresponding zinc methyl com-  
plexes to study the influence of the leaving  
group of the zinc atom in the catalytic hy-  
droamination / cyclization reaction.

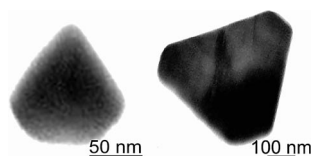
## Crystal Engineering

B. C. Zhang, A. J. Xie, Y. H. Shen,\*  
L. B. Yang, Y. P. Huang,  
J. J. Lu ..... 1376–1384



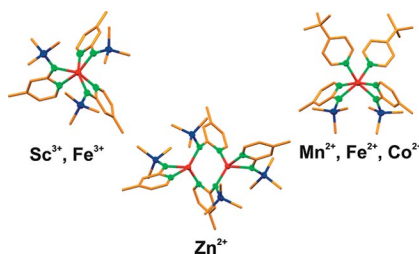
Morphogenesis of CuI Nanocrystals by a  
TSA-Assisted Photochemical Route: Syn-  
thesis, Optical Properties, and Growth  
Mechanism

**Keywords:** Copper / CuI / Nanocrystals /  
Crystal growth / Crystal engineering /  
Photochemistry / Optical properties



Optical materials consisting of  $\gamma$ -CuI nano-  
crystals with diamond and platelet mor-  
phologies were synthesised by utilising UV-  
irradiated 12-tungstosilicate as a reducing  
agent for the reduction of Cu<sup>2+</sup> and I<sub>2</sub> un-  
der ambient conditions. The synthetic pro-  
cesses were carefully followed by UV/Vis  
absorption and photoluminescence (PL)  
spectroscopy. A possible mechanism for the  
formation of diamond and platelet mor-  
phologies has been proposed.

Aminopyridinate complexes of  $\text{Sc}^{3+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Fe}^{2+}$ ,  $\text{Co}^{2+}$  and  $\text{Zn}^{2+}$  are synthesised and characterised and their magnetic behaviour investigated. One specific aminopyridinato ligand is able to stabilise all first row transition metal complexes, which indicates the high versatility of this ligand class.



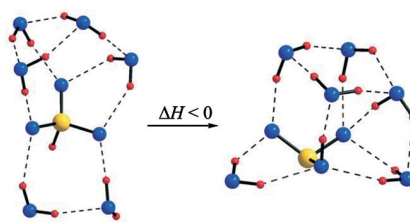
G. Glatz, S. Demeshko, G. Motz,  
R. Kempe\* ..... 1385–1392

First Row Transition Metal Aminopyridinates – the Missing Complexes

**Keywords:** N ligands / Cobalt / Iron / Manganese / Scandium / Zinc

## Microsolvation

A large number of hydrates of oxo  $\text{S}^{\text{IV}}$  species have been studied theoretically. The conversion of  $\text{SO}_2 \cdot 6\text{H}_2\text{O}$  into its isomer  $\text{H}_2\text{SO}_3 \cdot 5\text{H}_2\text{O}$  is predicted to be exothermic. The relative stability of sulfonate and hydrogensulfite anions  $[\text{SHO}_3]^-$  is reversed by solvation with more than four water molecules. In a polar continuum less water molecules have the same effect.



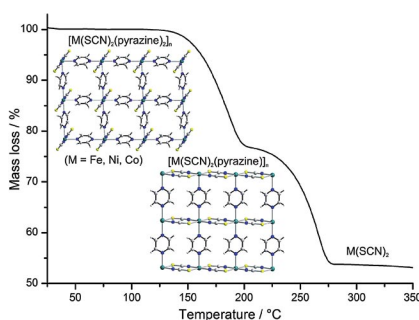
R. Steudel,\* Y. Steudel ..... 1393–1405

Sulfur Dioxide and Water: Structures and Energies of the Hydrated Species  $\text{SO}_2 \cdot n\text{H}_2\text{O}$ ,  $[\text{HSO}_3]^- \cdot n\text{H}_2\text{O}$ ,  $[\text{SO}_3\text{H}]^- \cdot n\text{H}_2\text{O}$ , and  $\text{H}_2\text{SO}_3 \cdot n\text{H}_2\text{O}$  ( $n = 0-8$ )

**Keywords:** Sulfur / Hydrates / Ab initio calculations / Hydrogen bonds / Thermodynamics

## Coordination Polymers

Four new (thiocyanato)metal coordination compounds with pyrazine as N-donor ligand are prepared and their structures and thermal and magnetic properties determined. The ligand-rich 1:2 compounds transform quantitatively into new ligand-deficient 1:1 compounds, some of which show a different magnetic behavior, depending on the connection mode of the thiocyanate anions, on heating.



M. Wriedt, I. Jeß,  
C. Näther\* ..... 1406–1413

Synthesis, Crystal Structure, and Thermal and Magnetic Properties of New Transition Metal–Pyrazine Coordination Polymers

**Keywords:** N ligands / Coordination polymers / Crystal structures / Thermal properties / Magnetic properties

\* 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 9 were published online on March 9, 2009