



The cover shows the varied coordination chemistry of a tetrazine ligand with silver(I), reported by Constable et al. (p.653).

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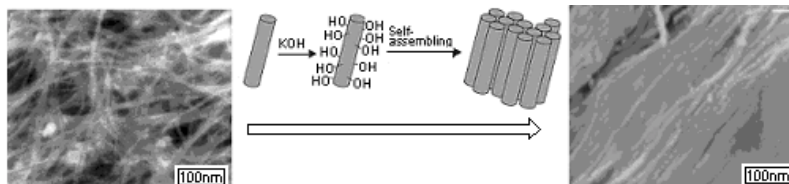
Reviews

Chemistry of Carbon Nanotubes

Tong Lin, Vardhan Bajpai, Tao Ji,
Liming Dai

Aust. J. Chem. **2003**, 56, 635–651.

In attempting to meet specific application requirements for carbon nanotubes, their surfaces need to be modified to ensure good bulk and surface properties. Site-selective reactions are the key to tailor nanotube surfaces for specific applications and for the formation of self-assembled supramolecular structures, as shown in the graphic. In this review, a number of recent advances and strategies in carbon nanotube chemistry is presented.

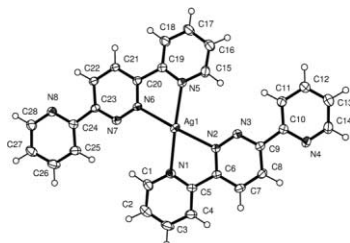


Rapid Communications

Structural Diversity in Silver(I) Complexes of 3,6-Di(2-pyridyl)pyridazines

Edwin C. Constable,
Catherine E. Housecroft,
Benson M. Kariuki, Markus Neuburger,
Christopher B. Smith

Aust. J. Chem. **2003**, 56, 653–655.



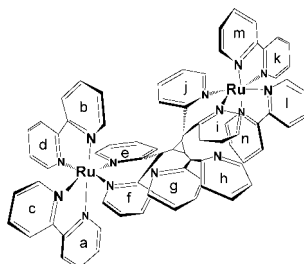
A grid-like structure is often found for silver(I) complexes, and one of the prototype reactions of 3,6-di(2-pyridyl)pyridazine ligands is the construction of a tetranuclear grid. When the ligands are combined with silver(I), however, discrete metal–organic molecules are obtained and, furthermore, the structures are reminiscent of those observed for silver(II).

Full Papers

Ruthenium(II) Complexes of Multidentate Ligands Derived from Di(2-pyridyl)methane

Deanna M. D'Alessandro,
F. Richard Keene, Peter J. Steel,
Christopher J. Sumbly

Aust. J. Chem. **2003**, 56, 657–664.



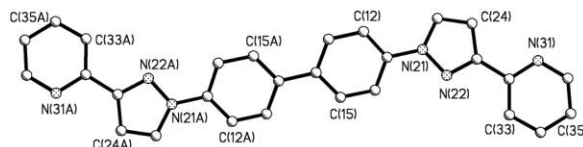
Bis(2,2'-bipyridyl)ruthenium complexes of the model ligand di(2-pyridyl)methane and its multidentate derivatives were prepared and characterized. The multidentate ligands proved surprisingly resistant to forming dinuclear ruthenium complexes. The two diastereoisomeric dinuclear complexes $\Delta\Delta/\Delta\Delta$ and racemic $\Delta\Delta/\Delta\Delta$ (the former is shown) are locked in conformations of C_1 and C_2 point-group symmetry, respectively. This represents a rare example where the $\Delta\Delta/\Delta\Delta$ -dinuclear complex of an achiral, symmetrical bridging ligand is not a *meso*-compound.

New Multidentate Pyrazolyl–Pyridine Ligands—Synthesis and Structures

Zöe R. Bell, Jon A. McCleverty,
Michael D. Ward

Aust. J. Chem. **2003**, 56, 665–670.

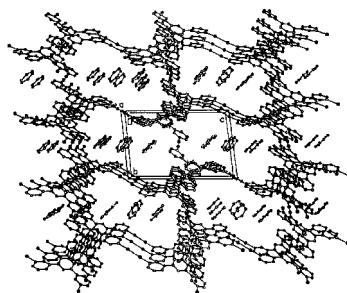
A range of ligands, in which two or three bidentate pyrazolyl–pyridine units are linked by an aromatic head-group, has been prepared and structurally characterized. Full details of their crystal structures are provided. Ligands of this nature are popular for studies in self-assembly.



Enclathrating Benzene in a Neutral Dicopper(II) Coordination Framework

Hong-Bo Liu, Shu-Yan Yu, Hui Huang,
Zhong-Xing Zhang

Aust. J. Chem. **2003**, 56, 671–674.

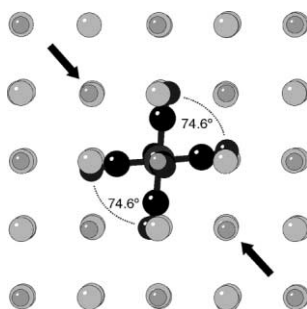


Coordination polymers with the ability to include small molecules offer potential applications in ion exchange, isomer separation, and in catalysis. One of the structures reported in this manuscript is composed of linear helical polymers and forms large hydrophobic channels. These channels can selectively accommodate up to seven benzene molecules per channel cross-section.

Incorporation of Cyano Transition Metal Complexes in KCl Crystals—Experimental and Computational Studies

Damien J. Carter, Mark I. Ogden,
Andrew L. Rohl

Aust. J. Chem. **2003**, 56, 675–678.



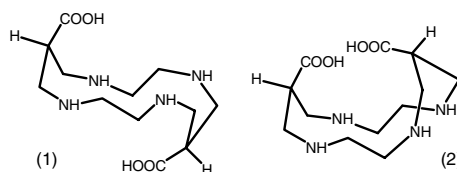
Experimental and computational studies of the incorporation of hexacyanoferrate(II), hexacyanocobaltate(III), and hexacyanoferrate(III) complex anions into potassium chloride crystals are described. The extent of incorporation follows the trend, hexacyanoferrate(II) \gg hexacyanoferrate(III) $>$ hexacyanocobaltate(III). Computational modelling produced replacement energies and geometries that match the experimental results.

Isomers of 1,4,8,11-Tetraazacyclotetradecane-6,13-dicarboxylate Characterized as Cobalt(III) Complexes

Paul V. Bernhardt, Trevor W. Hambley,
Geoffrey A. Lawrance, Marcel Maeder,
Eric N. Wilkes

Aust. J. Chem. **2003**, 56, 679–684.

The *trans*- and *cis*-isomers of 1,4,8,11-tetraazacyclotetradecane-6,13-dicarboxylate (1) and (2), respectively, have been defined by X-ray crystal structures of their cobalt(III) complexes. This completes characterization of a series of C-pendant cyclam analogues that have the potential to totally encapsulate metal ions that favour hexadentate coordination.

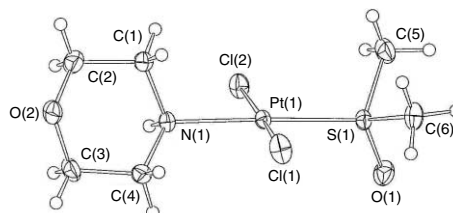


The Synthesis and in Vitro Cytotoxicity of Two *trans*-Platinum Complexes of Heterocyclic Amines

Georgina Giannikopoulos,
Chih-Lynne Teo, Matthew D. Hall,
Ronald R. Fenton, Trevor W. Hambley

Aust. J. Chem. **2003**, 56, 685–689.

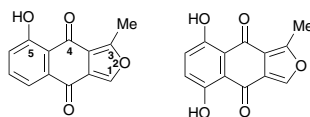
The *trans*-platinum(II) geometry can be activated using bulky ligands. Two complexes with *trans*-sulfoxide and amine groups are described. The in vitro cytotoxicity of one of these compounds is much lower than that of cisplatin. Thus, this geometry does not give rise to uniform activity and there is a need for further investigation of the structure–activity relationships.



The Synthesis of 5-Hydroxy-3-methylnaphtho[2,3-*c*]furan-4,9-dione and 5,8-Dihydroxy-1-methylnaphtho[2,3-*c*]furan-4,9-dione

Matthew J Piggott, Dieter Wege

Aust. J. Chem. **2003**, 56, 691–702.

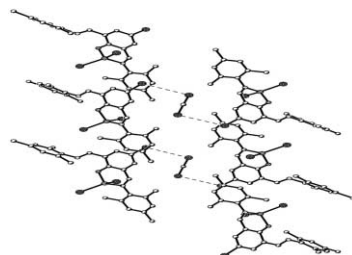


The syntheses of 5,8-dihydroxy-1- and 5-hydroxy-3-methylnaphtho[2,3-*c*]furan-4,9-dione (a metabolite of *A. ferox* and *B. capitata*, plants with therapeutic properties) are reported here. The former involves a Friedel–Crafts acylation. The latter involves an annulation reaction and the construction of a furan ring through allylic bromination, hydrolysis, and dehydration. Several other unusual products are reported and arguments for the derived structures given.

Synthesis, Characterization, and Ethylene Oligomerization of 2,6-Bis(imino)phenoxy Cobalt Complexes

Jianlong Du, Lingqin Han, Yong Cui, Jitai Li, Yan Li, Wen-Hua Sun

Aust. J. Chem. **2003**, 56, 703–706.

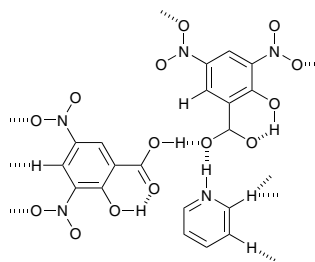


A series of cobalt complexes bearing 2,6-bis(imino)phenoxy ligands were synthesized by treating the ligand 2,6-bis(imino)phenol with an equivalent of cobalt dichloride. These complexes were characterized and subject to single-crystal X-ray diffraction (the unit cell of the complex is shown). All complexes displayed catalytic activities for ethylene oligomerization with the presence of MAO in toluene.

Structure Making with 3,5-Dinitrosalicylic Acid. II. The Proton-Transfer Compounds of 3,5-Dinitrosalicylic Acid with the Monocyclic Heteroaromatic Amines

Graham Smith, Urs D. Wermuth, Peter C. Healy, Jonathan M. White

Aust. J. Chem. **2003**, 56, 707–713.



A series of proton-transfer compounds between 3,5-dinitrosalicylic acid (dnsa) with a series of common monocyclic heteroaromatic amines (pyridine, 4-cyanopyridine, pyridine-4-carboxylic acid, 2,6-diaminopyridine, and 2-aminopyrimidine) were prepared. In these compounds, protonation of the hetero-nitrogen atom occurs with subsequent hydrogen bonding to the oxygen atoms of the functional groups of the dnsa anions. This results in the formation of relatively simple linear or chain polymer associations.

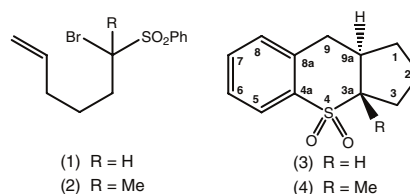
Short Communications

α -Sulfonyl Radical Initiated Intramolecular Tandem Radical Cyclization: Stereochemistries of a Pair of Doubly Cyclized Products

Lindsay T. Byrne, Manat Phomakotr, Chompoonut Poolsanong, Vichai Reutrakul, Brian W. Skelton, Allan H. White

Aust. J. Chem. **2003**, 56, 715–717.

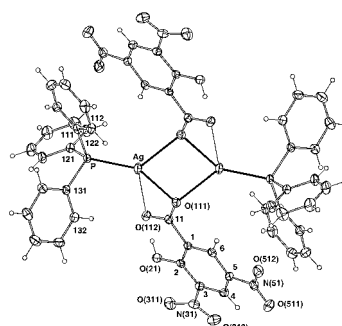
Single-crystal X-ray structure determinations are reported for the minor products of the α -sulfonyl radical initiated cyclization of $\text{H}_2\text{C}=\text{CH}(\text{CH}_2)_3\text{CRBrSO}_2\text{Ph}$ with $\text{R} = \text{H}$, CH_3 . Assigned structures are confirmed and the *trans*-relationship at the ring junctions is rigorously established; this implies the structure of the transition state.



Synthesis and Structure of the Binuclear 1 : 1 Silver(I) 2-Hydroxy-3,5-dinitrobenzoate/Triphenylphosphine Complex

A. Hamid bin Othman, Effendy, Brian W. Skelton, Allan H. White

Aust. J. Chem. **2003**, 56, 719–721.



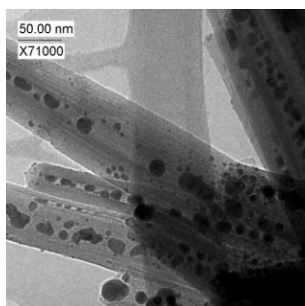
The single-crystal X-ray structure of the title adduct is reported. This, like one form of its silver(I) acetate analogue, is a binuclear system with two silver atoms bridged by carboxylate oxygen atoms giving a central four-membered ring, the phenolic oxygen retaining its associated hydrogen.

Focus

Halloysite: A Low-Cost Alternative Nanotube

Sarah J. Antill

Aust. J. Chem. **2003**, 56, 723.



One route to the fabrication of nanostructures such as nanowires, rods, and clusters is to fill ('load') nanotubes with encapsulated material. This paper describes the loading of halloysite nanotubes (as shown) and their use as geometric analogues of the more expensive, technically demanding carbon or boron nitride nanotubes.

Book Review

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