Rapid Communication

A Two-Dimensional Layered Cadmium Polymer Featuring Cd₄(μ-O)₄ Cores and Fluorescent Emission

Jin-Hua Yang, Wei Li, Shao-Liang Zheng, Zhen-Li Huang, Xiao-Ming Chen

Full Papers

Preparation and Photochemistry of Some Cobalt(III) Complexes of Tridentate Oxime-Diamine and Oxime-Amino Acid Ligands

Carl A. Otter, Richard M. Hartshorn

Chiral Resolution of Hexaamine Cobalt(III) Cages: Substituent Effects on Chiral Discrimination

Paul V. Bernhardt, Tri Erny Dyahningtyas, Jack M. Harrowfield, Jee-Young Kim, Yang Kim, Elisabeth Rukmini

HPLC Separation of Diastereomeric Metal Complexes of the Form Δ,Δ-[Ru(diimine)]₂(5)-aminoacidate]

Janice R. Aldrich-Wright, Robert S. Vagg, Peter A. Williams
Gas-Phase Studies on the Reactivity of the Azido(diethylenetriamine)-platinum(II) Cation and Derived Species


The gas-phase chemistry of the title compound, probed by means of collision-induced dissociation and ion–molecule reactions, reveals a wealth of reaction pathways and surprising complexity. Several compounds shown were candidates for the fragmentation intermediates, but complementary labelling studies eliminated two of these.

The Structure of 1,3-Enaminoketonatoboron Difluorides in Solution and in the Solid State

Kuniaki Itoh, Kazuhiko Okazaki, Miki Fujimoto


The structures of the title compounds in solution and the solid state, as determined by spectroscopic methods, are discussed. In solution, the ketoamine and enolimine tautomeric forms may be present in equal amounts, whereas in the solid state the contribution of the enolimine increases. These results help explain the reactivity and products from the reaction of the BF₂ complex (as shown).

Stereochemistry and Crystal Structures of Bis Cycloadducts of Danishefsky’s Diene (Me₃SiOC(=CH₂)CH=CHOMe) with 2,5- and 2,6-Dichlorobenzoquinone

Donald W. Cameron, Raymond L. Evans, Geoffrey I. Feutrill, Vincent A. Patrick, Brian W. Skelton, Allan H. White


Syntheses and single crystal X-ray structural characterizations are reported for bis adducts formed between Danishefsky’s diene with the title dienophiles. Formation of each adduct (an example of which is shown) involves diastereoccontrolled creation of six stereogenic centres.

Tetracycle Formation from the Reaction of Acetophenones with 1-Aminoanthraquinone, and Further Annulation of Pyridine and Diazepine Rings

Leslie W. Deady, Clare L. Smith


In exploring routes to analogues of the potent antitumour agent (left structure), access to the 2-aryl moiety was required. The reaction of 1-aminoanthraquinone with acetophenones under the alkaline conditions reported herein provides the desired system, but with a 6-CH₂COAr substituent (right structure). Useful polycyclic products are prepared from these compounds.

Valence-Bond and Hückel Molecular Orbital Diradicals—Alternant versus Nonalternant Effects

Jerry Ray Dias


‘A bond is formed from two electrons’ is arguably, along with the concept of valence, the foundation for chemical reasoning. Understanding the formation of diradicals therefore demands understanding these fundamentals of bonding. In this paper, two distinct classes of diradicals are examined in conjunction with alternant and nonalternant hydrocarbons, and the tendencies to undergo skeletal distortions in transforming to a nonradical form.
Substituent Effects in the Reduction Behaviour of Thio- and Oxopyrimidines in Non-Aqueous Solvents

Marco Borsari, Maria Cannio, Daniela Dallari, Claudio Fontanesi, Giovanna Gavioli, Silvia Peressini, Claudio Tavagnacco


Magneto-Structural Correlation in Di-μ-oxo Bridged Dicopper Complexes—Predictability of Isotropic Exchange-Coupling Constant from Structure

G. V. R. Chandramouli, Tapan Kumar Kundu, Periakaruppan T. Manoharan


Short Communications

‘Neutralmolekülcomplexe’—Structural Characterization of Some Adducts of Urea and Thiourea with N,N’-Bidentate Aromatic Bases

Paul S. Donnelly, Brian W. Skelton, Allan H. White


Synthesis and Characterization of the Nickel(II) Complex of a Macrocyclic Schiff Base Ligand with a Single Pendant Coordinating Hydroxyl Arm

Ali A. Khandar, Seyed A. Hosseini-Yazdi


Amino Acid Binding to Copper(II) in (1,4,7-Triazacyclononane)(l.-histidine)-copper(II) Hexafluorophosphate Monohydrate

Bim Graham, Milton T. W. Hearn, Leone Spiccia, Brian W. Skelton, Allan H. White


Pyrimidine bases and their thio derivatives are widespread in biological systems, in which their electron transfer properties are of importance. This examination of the electrochemical reduction behaviour of a collection of substituted thio- and oxopyrimidines (shown) in a number of protic and aprotic media aids clarification of the relationship between molecular structure and electron transfer processes.

Correlation between isotopic exchange coupling constant and their structural parameters in the CuO₂Cu moiety, as indicated in the graphic, have been examined with reference to more than 100 compounds. In these compounds the superexchange path requires covalent bonding between copper and bridging oxygen atoms; however, if the Cu–O bond length is greater than 2.25 Å, this pathway probably breaks down.

As an important yet simple ingredient controlling crystal architectures, (thio)urea is widely used. With the bidentate aromatic bases investigated here—bipyridine, 1,10-phenanthroline, 2,9-dimethyl-1,10-phenanthroline—the resulting 1:1 complexes form infinite one-dimensional hydrogen-bonded chains.

Macrocyclic complexes that contain pendant arms are being studied more intensely because it has emerged that they play an important role in biological systems and are good bioinorganic models for cobalamine. Here the authors report the synthesis and characterization of a nickel(II) complex of a 16-membered mixed-donor macrocyclic Schiff base ligand with a pendant hydroxyl arm.

The reaction of [Cu(tacn)Br₂] with L-histidine afforded [Cu(tacn)(L-His)]PF₆·H₂O. This complex has a distorted square pyramidal copper(II) coordination sphere that is occupied by three nitrogen atoms of the tacn macrocycle, as well as one carboxylate oxygen and the primary nitrogen of L-histidine. The imidazole moiety remains protonated.
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