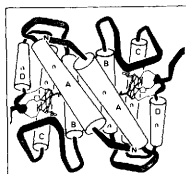


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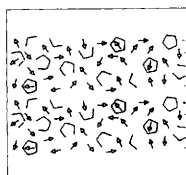


Nitric Oxide in Biology: Its Role as a Ligand By R. J. P. Williams (pp. 77-83)

The function of nitric oxide in organisms through its synthesis by a haem enzyme and its binding to a haem receptor is described using information from model haem complexes and known haem proteins. Nitric oxide has to act as an allosteric signal and hence its binding has to be linked to a relay of conformation changes which are analysed here.

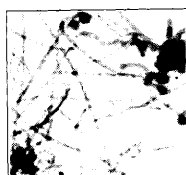
Man and the Elements of Groups 3 and 13 By John Burgess (pp. 85-91)

Inorganic chemistry plays a central role in the workings of the human body, in sickness and in health. The elements of Groups 3 and 13 of the Periodic Table, including the lanthanides and actinides, illustrate this theme in respect of essential elements and toxicity, and of the varied applications of inorganic species in the diagnosis of disease and subsequent therapy.



New Developments in Making Compounds and Materials by Condensing Gaseous High-temperature Species at Atmospheric or Low Pressure By Peter L. Timms (pp. 93-100)

Gaseous atoms and small molecules made at high temperatures are a fruitful source of new compounds and materials provided that they are condensed or reacted under the right conditions. This theme is illustrated by work on reactions of metal atoms with hexafluorobenzene under vacuum at -196°C to give new bisarenometal complexes, on the condensation of gaseous SiO in flowing gas streams at atmospheric pressure to give novel fibrous solids, and on vacuum reactions of SiO or dihalosilylenes with cold solutions of I_2 in aromatic solvents to give poly(aryliodosiloxanes) or aryldihalosilanes.

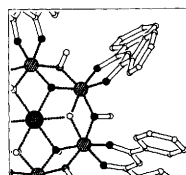


Magnetism of Large Iron-Oxo Clusters

By Dante Gatteschi, Andrea Caneschi, Roberta Sessoli and Andrea Cornia (pp. 101-109)

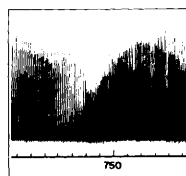
The role of large iron-oxo clusters in chemistry, material science, and fundamental physics is briefly reviewed. Examples of clusters with nuclearity ranging from 6 to 19 are reported as well as their magnetic properties. Relevant topics, such as the role of spin topology and spin frustration in antiferromagnetically coupled systems and the observation of superparamagnetic like behaviour and molecular hysteresis, are discussed.

The use of strong magnetic fields in the characterization of magnetic clusters is emphasized and a theoretical approach for the rationalization of the magnetic properties of clusters is briefly reported.



Infrared Fourier Transform Emission Spectroscopy By Peter F. Bernath (pp. 111-115)

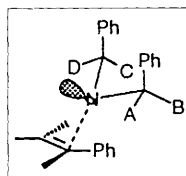
Infrared emission spectroscopy has been unjustly neglected. For high temperature systems, infrared emission spectroscopy offers an improvement in sensitivity over traditional absorption methods. The power of the emission technique is illustrated with a series of examples ranging from LiH to C_{60} .



Asymmetric Synthesis of β -Amino Acids and α -Substituted β -Amino Acids

By Guiliiana Cardillo and Claudia Tomasini (pp. 117-128)

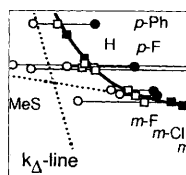
β -Amino acids are present in a wide variety of biologically active natural products and are constituents of the β -lactam framework. The first part of this review is intended to report some relevant naturally occurring compounds containing β -amino acids. The second part summarises some of the more recent developments in the synthesis of β -amino acids and α -substituted β -amino acids, by routes involving the enzymatic resolution of racemic mixtures, the intermediary preparation of perhydropyrimidin-4-ones and the conjugate addition of ammonia equivalents to α,β -unsaturated esters and imides.



Varying Resonance Demand in Carbocationic Systems

By Yuho Tsuno and Mizue Fujio (pp. 129-139)

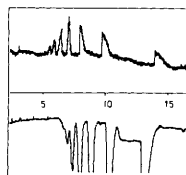
The use of the Yukawa-Tsuno equation for the mechanistic analysis of solvolytic reactions has been widely explored. It gives excellent correlations, with a spectrum of r values, for a wide variety of reactions. It has been substantiated that the intrinsic resonance demand r in the Y-T equation is an inherent property of the intermediate or transition state of the reaction, and is characteristic of the structure of that intermediate.



Charged Cyclodextrin Derivatives as Chiral Selectors in Capillary Electrophoresis

By B. Chankvetadze, G. Endresz and G. Blaschke (pp. 141-153)

This review summarizes recent developments in chiral capillary electrophoresis using charged cyclodextrins as chiral selectors and shows the possibilities of separation of enantiomers of the basic chiral analytes using an extremely low concentration of chiral selector as well as enantioseparation of neutral chiral analytes in capillary electrokinetic chromatography, enantioseparation in counter current flow of chiral selector and solute and several new possibilities for the reversal of enantiomer migration order. The usefulness of NMR spectroscopy is also shown for the better understanding of the mechanism of chiral separation in CE.



Articles that will appear in forthcoming issues include

Modelling of Solvent effects on the Diels-Alder Reaction **C. Cativiela, J. I. García, J. A. Mayoral and L. Salvatella**

After the Actinides then what? **Simon A. Cotton**

Chiral Discrimination by Modified Cyclodextrins **Christopher J. Easton and Stephen F. Lincoln**

Solid State Metathesis Reaction for Metal Borides, Silicides, Pnictides and Chalcogenides. Ionic or Elemental Pathway **I. P. Parkin**

Through-bond and Through-space Models for Interpreting Chemical Reactivity in Chemical Reactions **Keith Bowden and Edward J. Grubbs**

Arene-catalysed Lithiation Reactions **Miguel Yus**

Diatomic Molecular Probes for Mid-IR Studies of Zeolites **A. Zecchina and C. Otera Areán**

The Chemistry of Paper Conservation **Vincent D. Daniels**

A Radical Reappraisal of Gif Reactions **M. John Perkins**

On the Mechanism of the Gif Reaction **Derek H. R. Barton**

INGOLD LECTURE: Reactive Intermediates: Carboxylic Acid Enols and Other Unstable Species **A. J. Kresge**

Photoelectron Spectroscopy in a New Light: Zero Kinetic Energy (ZEKE) Photoelectron Spectroscopy with Coherent Vacuum Ultraviolet Light **John W. Hepburn**

The Changing Face of Arene Oxide-Oxepine Chemistry **Derek R. Boyd and Narain D. Sharma**

New Approaches to Chemical Kinetics **Barry Johnson and Stephen K. Scott**

Assembly and Encapsulation with Self-complementary Molecules **Julius Rebek, Jr.**

Application of Fluorescence Microscopy to a Study of Chemical Problems **R. S. Davidson**

Designing New Lattice Inclusion Hosts **Roger Bishop**

Potential Energy Surface Crossings in Organic Photochemistry **Fernando Bernadi, Michael Robb and Massimo Olivucci**

Specificity and Versatility in Erythromycin Biosynthesis **Rembert Pieper, Camilla Kao, Chaitan Khosla, Guanglin Luo and David E. Cane**

Glutamate and 2-Methyleneglutarate Mutase: From Microbial Curiosities to Paradigms for Coenzymes B₁₂-dependent Enzymes **Wolfgang Buckel and Bernard T. Golding**