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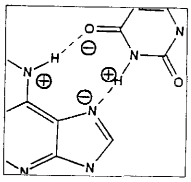
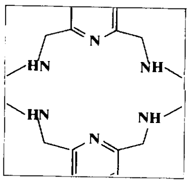


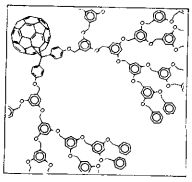
Linear Free Energy Relationships and Pairwise Interactions in Supramolecular Chemistry *By Hans-Jörg Schneider* (pp. 227–234)

Association free energies G_t of supramolecular complexes can be described by simple additive increments. These are taken either directly from plots of experimental G_t *vs.* the number of interactions occurring in the complexes, or – if many different ligand sites are participating – by using numbers for their electron donating or accepting properties, *e.g.* from single hydrogen bond measurements in carbon tetrachloride, in analogy to substituent constants in LFER. Thus empirically secured increments for Coulomb-, hydrogen bond-, van der Waals-, and ionophore interactions can be used for understanding and designing complexes of biological and industrial importance.



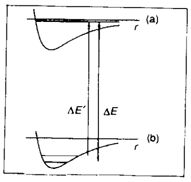
Solution Chemistry of Lanthanide Macrocyclic Complexes *By Françoise Arnaud-Neu* (pp. 235–241)

In this article, the solution chemistry of the interactions between lanthanide cations and macrocyclic receptors is presented through selected examples referring to neutral and ionizable coronands and cryptands as well as phenolic calixarenes and their chemically modified derivatives. The different factors governing the thermodynamics of complexation and the selectivity, *e.g.* solvent effects, the respective sizes of the cations and the ligands, the number and nature of the binding sites, are discussed.



Syntheses, Structures, and Properties of Methanofullerenes *By François Diederich, Lyle Isaacs, and Douglas Philp* (pp. 243–255)

The chemistry of the fullerenes has been extensively explored – this review focuses specifically on the methanofullerenes. A comprehensive coverage of the known methanofullerene syntheses is presented. This is followed by a discussion of the electronic structure of the methanofullerenes which is based on experimental and computational studies. Lastly, we discuss the further functionalization of the methanofullerenes and their possible applications in materials and biomedical sciences.

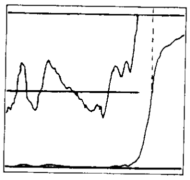


Non-ideality in Isotopic Mixtures *By Gábor Jancsó, Luis P. N. Rebelo, and W. Alexander Van Hook* (pp. 257–264)

Although widely considered to be ideal solutions, mixtures of isotopically substituted molecules (*e.g.* CH_4 and CD_4) show small but significant deviations from ideality. This review discusses the experimental determination of non-ideality in solutions of isotopomers and their theoretical interpretation, including the molecular origins of the effect.

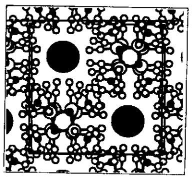
Protein Structure from Linear Dichroism Spectroscopy and Transient Electric Birefringence *By Michael Bloemendal* (pp. 265–273)

This paper discusses two less well-known techniques for studying protein structures in solution, linear dichroism (LD) spectroscopy and electric field induced transient birefringence (ETB). From the former, information on the orientation of chromophoric groups in molecules, on molecular characteristics such as shape, size, and electronic properties, and on binding parameters in molecular complexes, can be determined. From ETB hydrodynamic and electronic parameters, aggregational state, and intramolecular flexibility can be monitored. Both techniques are comparatively fast, and use relatively small quanties (0.2—1 mg) of protein at low concentration. After a general description of the principles of the techniques, their application for the study of a specific lens-protein, α-crystallin, is discussed in detail.



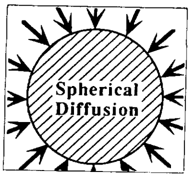
Propagation of Interfacial Waves in Microgravity *By François Quirion, Marie-Claude Asselin, and Guy G. Ross* (pp. 275–281)

The propagation of waves at the interface of liquids is a topic relevant to fluid management and materials processing in space. The results obtained on earth and during parabolic flights emphasize the importance of wetting phenomena on the overall configuration of liquids and their response to perturbations in a reduced gravity environment.



Crystal Engineering of Diamondoid Networks *By Michael J. Zaworotko* (pp. 283–288)

The review focuses upon recent research which has demonstrated that modular or multi-component strategies for designing and constructing diamondoid solids can be successful if they are based upon exploiting symmetry and functionality at the molecular level. Diamondoid networks can be sustained by a wide range of moieties and attractive forces can range from weak (π-hydrogen bonds) to strong (coordinate covalent bonds) as long as they are directional. The implications of the work in the general context of crystal engineering and future directions for research are also discussed.



Microelectrodes: New Dimensions in Electrochemistry *By Robert J. Forster* (pp. 289–297)

The development of electrodes with dimensions in the micrometre range has revolutionized electrochemistry by greatly extending the accessible sample environments and timescales. This article reviews the electrochemical properties of these small electrodes, as well as their application in electroanalysis, biological systems, studies of fast electron-transfer and chemical kinetics, and as probes in scanning electrochemical microscopy. Likely future advances including the direct investigation of single molecular events, the development of electron-transfer theory, and new electroanalytical techniques are also considered.

Articles that will appear in forthcoming issues include

Photooxidation Reactions of Transition Metal Carbonyls in Low-temperature Matrices **M. J. Almond**

Some Aspects of the Metal–Insulator Transition **J. K. Burdett**

The Insertion of Alkynes into Metal–Metal Bonds and Organic Chemistry of the Dimetallated Olefin Complexes **R. D. Adams**

1,10-Phenanthroline: A Versatile Ligand **P. G. Sammes and G. Yahioglu**

Electrochemical Solid State Analysis: State of the Art **F. Scholz and B. Meyer**

Aqueous Aluminates, Silicates, and Aluminosilicates **T. W. Swaddle, J. Salerno, and P. A. Tregloan**

The Thermodynamics of Micellar Solubilization of Neutral Solutes in Aqueous Binary Surfactant Systems **C. Treiner**

Oxidation of Some Organic Compounds by Aqueous Bromine Solutions **J. Palou**

Biological Activity, Reactivity, and Use of Chromotropic Acid and its Derivatives **J. Duda**

The Dynamics of Photodissociation **R. N. Dixon**

Pericyclic Key Reactions in Biological Systems and Biomimetic Syntheses **U. Pindur and G. H. Schneider**

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