

## JOURNAL OF THE CHEMICAL SOCIETY

## Chemical Communications

Number 14  
1990

## CONTENTS

- 949 Reaction of CS<sub>2</sub> with OH: a Quantum Chemical Study **S. Lunell, M.-B. Huang, K. A. Sahetchian, C. Chachaty, F. Zabel**
- 951 Preparation and Characterization of [V<sub>3</sub>Cl<sub>5</sub>(tmeda)<sub>3</sub>][V(NPh<sub>2</sub>)<sub>4</sub>] (tmeda = *N,N,N',N'*-tetramethylethylenediamine): a VI–VIII Mixed Valence Complex **Jilles J. H. Edema, Auke Meetsma, Sandro Gambarotta**
- 953 Total Synthesis of the 5-Methylenephosphonate Analogue of *D-myo*-Inositol 1,4,5-Trisphosphate **J. R. Falck, Abdelkrim Abdali, Steven J. Wittenberger**
- 955 An Improved Route to Guanines Substituted at N-9 **Mark Ashwell, Christine Bleasdale, Bernard T. Golding, Ian K. O'Neill**
- 956 Ternary Complexes and Diels–Alder Reaction of Cyclopentadiene in Crystalline Cyclodextrins **David L. Wernick, Ahmed Yazbek, Joseph Levy**
- 958 Facile Preparation, Characterization, and X-Ray Crystal Structure of [Ru<sub>3</sub>{μ<sub>3</sub>-η<sup>7</sup>-C<sub>5</sub>Me<sub>3</sub>(CH<sub>2</sub>)<sub>2</sub>}(μ<sub>3</sub>-O)(μ<sub>2</sub>-H)(η<sup>5</sup>-C<sub>5</sub>Me<sub>5</sub>)<sub>2</sub>(η<sup>2</sup>-SO<sub>4</sub>)], a High-valent Hydrido–Oxo Cluster of Ruthenium **Xiao-Dong He, Bruno Chaudret, Fernando Lahoz, José A. Lopez**
- 959 A New Co-ordinating Role for a Metal Salicylaldimine **Desmond Cunningham, John F. Gallagher, Tim Higgins, Patrick McArdle, John McGinley, David Sheerin**
- 961 The Effect of Strain on the Catalytic Reactions of Bridged Thiazolium Salts as Models of Thiamin **Finian J. Leeper, David H. C. Smith**
- 963 Detecting Labile Acid–Base Interactions at Low Temperature: Synthesis and X-Ray Structure of the Ternary Titanium Tetrachloride–Sulphur Dioxide–Arene Systems **Euro Solari, Carlo Floriani, Kurt Schenk**
- 964 Bioreduction with Immobilized Bakers' Yeast in Hexane using Alcohols as an Energy Source **Yoshinobu Naoshima, Jusei Maeda, Yoshihito Munakata, Tadashi Nishiyama, Makoto Kamezawa, Hojun Tachibana**
- 965 Improved Method for the Synthesis of *o*-Glycosylated Fmoc Amino Acids to be used in Solid-phase Glycopeptide Synthesis (Fmoc = fluoren-9-ylmethoxycarbonyl) **Beatriz G. de la Torre, Josep L. Torres, Eduard Bardají, Pere Clapés, Núria Xaus, Xavier Jorba, Sílvia Calvet, Fernando Albericio, Gregorio Valencia**
- 967 A Novel Synthesis of Seven-membered Ring Cyclic Ethers **Prabhat Arya, Tak-Hang Chan**
- 968 A New Route to Chiral Calix[4]arenes via 1,3-Derivatization **Volker Böhmer, Artur Wolff, Walter Vogt**
- 970 Electroactive Langmuir–Blodgett Films of *O*-Hexadecylthiocarboxytetrathiafulvalene (HDTTTF) **Ajaib S. Dhindsa, Jas Pal Badyal, Martin R. Bryce, Michael C. Petty, Adrian J. Moore, Yury M. Lvov**
- 972 Construction of *trans*-Ring-fused Compounds by Radical Cyclization **Derrick L. J. Clive, Hartford W. Manning, Taryn L. B. Boivin**
- 974 [Ag<sub>2</sub>([15]ancS<sub>3</sub>)<sub>2</sub>]<sup>2+</sup>: a Binuclear Silver(I) Complex incorporating Asymmetrically Bridging Thioether Donors. ([15]ancS<sub>3</sub> = 1,4,7,10,13-Pentathiacycloundecane) **Alexander J. Blake, Robert O. Gould, Gillian Reid, Martin Schröder**
- 976 The First Structurally Characterized Alkali Metal Porphyrin: <sup>7</sup>Li NMR Behaviour and X-Ray Crystal Structure of the Dilithium Salt of Octaethylporphyrin(2–) **John Arnold**
- 979 Crown Thioether Chemistry. Synthesis and Structure of the d<sup>0</sup> Re<sup>VII</sup> Complex [ReO<sub>3</sub>(9S3)]<sup>+</sup> (9S3 = 1,4,7-Trithiacyclononane) **Heinz-Josef Küppers, Bernhard Nuber, Johannes Weiss, Stephen R. Cooper**
- 980 The Flexibility of Bridging Phosphinoyl Ligands: New Classes of Triplatinum(II) and Diplatinum(I) Complexes **Nathaniel W. Alcock, Paola Bergamini, Tania M. Gomes-Carniero, Richard D. Jackson, Julian Nicholls, A. Guy Orpen, Paul G. Pringle, Silvana Sostero, Orazio Traverso**
- 982 Asymmetric Self-catalytic Reaction. Self-production of Chiral 1-(3-Pyridyl)alkanols as Chiral Self-catalysts in the Enantioselective Addition of Dialkylzinc Reagents to Pyridine-3-carbaldehyde **Kenso Soai, Seiji Niwa, Hiroshi Hori**

- 984 A Concise Synthesis of ( $\pm$ )-, (+)-, and (-)-6-Methyl-6-azabicyclo[3.2.1]octan-3 $\alpha$ -ol **Abraham Philip, J. Bruce Pitner, Young J. Joo, David J. Triggler, F. Ivy Carroll**
- 985 Ready Deprotonation of the Protic Solvento Species  $[\text{Ru}_2(\text{CO})_5(\text{R}'\text{OH})\{\mu\text{-(RO)}_2\text{PN}(\text{Et})\text{P}(\text{OR})_2\}_2]^{2+}$  (R = Me or Pri; R' = H, Me, Et, *etc.*) and the Formation of  $[\text{Ru}_2\{\mu\text{-OC(O)}\}(\text{CO})_4\{\mu\text{-(RO)}_2\text{PN}(\text{Et})\text{P}(\text{OR})_2\}_2]$  containing Carbon Dioxide in a Bridging Co-ordination Mode **John S. Field, Raymond J. Haines, Jorg Sundermeyer, Stephen F. Woollam**
- 988 Selective Reduction of Carbonyl Groups with Systems composed of  $(\eta^5\text{-C}_3\text{H}_5)_2\text{MoH}_2$  and Protonic Acids: New highly Regio- and Diastereo-selective Reduction of Ketones **Takashi Ito, Miho Koga, Susumu Kurishima, Makoto Natori, Norihiro Sekizuka, Ken-ichiro Yoshioka**
- 989 Theoretical Prediction of the Stereochemistry and Regiochemistry in Anionic Addition to Phospha-ethyne **Minh Tho Nguyen**
- 991 Alkylation of 3,4-Dihydro- $\beta$ -carboline **Masako Nakagawa, Tomohiko Kawate, Hitoshi Yamazaki, Tohru Hino**
- 993 Preparation of Organosilicon Derivatives of Cobalt-complexed But-2-yne-1,4-diol. X-Ray Crystal Structure of  $[\text{Co}_2(\text{CO})_5\text{-}(\text{PPh}_3)\{\mu\text{-C}_2(\text{CH}_2)_2\text{O}_2(\text{SiPh}_2)_2\text{O}_2(\text{CH}_2)_2\text{C}_2\}\text{Co}_2(\text{CO})_5(\text{PPh}_3)]$  **R. Harry Cragg, John C. Jeffery, Michael J. Went**
- 994 A Formal Total Synthesis of (-)-Isoavenaciolide from L-Quebrachitol **Noritaka Chida, Takahiko Tobe, Masami Suwama, Masami Ohtsuka, Seiichiro Ogawa**
- 996 Two-dimensional Intermolecular Heteronuclear  $^{13}\text{C}, ^1\text{H}$  Overhauser Effect as a Probe for Hydration of the Amide Group **H. B. Seba, B. Ancian**
- 997 The Total Synthesis of (+)-Norpatchoulenol: Trapping of a Non-enolizable 1,3-Diketone Intermediate with a Wittig Reagent **Hsing-Jang Liu, Milan Ralitsch**
- 999 Total Synthesis of (+)-Validoxyamine G **Yasunobu Miyamoto, Seiichiro Ogawa**

**AUTHOR INDEX**

- Abdali, Abdelkrim, 953  
 Albericio, Fernando, 965  
 Alcock, Nathaniel W., 980  
 Ancian, B., 996  
 Arnold, John, 976  
 Arya, Prabhat, 967  
 Ashwell, Mark, 955  
 Badyal, Jas Pal, 970  
 Bardají, Eduard, 965  
 Bergamini, Paola, 980  
 Blake, Alexander J., 974  
 Bleasdale, Christine, 955  
 Böhmer, Volker, 968  
 Boivin, Taryn L. B., 972  
 Bryce, Martin R., 970  
 Calvet, Sílvia, 965  
 Carroll, F. Ivy, 984  
 Chachaty, C., 949  
 Chan, Tak-Hang, 967  
 Chaudret, Bruno, 958  
 Chida, Noritaka, 994  
 Clapés, Pere, 965  
 Clive, Derrick L. J., 972  
 Cooper, Stephen R., 979  
 Cragg, R. Harry, 993  
 Cunningham, Desmond, 959  
 de la Torre, Beatriz G., 965  
 Dhindsa, Ajaib S., 970  
 Edema, Jilles J. H., 951  
 Falck, J. R., 953  
 Field, John S., 985  
 Floriani, Carlo, 963  
 Gallagher, John F., 959  
 Gambarotta, Sandro, 951  
 Golding, Bernard T., 955  
 Gomes-Carniero, Tania M., 980  
 Gould, Robert O., 974  
 Haines, Raymond J., 985  
 He, Xiao-Dong, 958  
 Higgins, Tim, 959  
 Hino, Tohru, 991  
 Hori, Hiroshi, 982  
 Huang, M.-B., 949  
 Ito, Takashi, 988  
 Jackson, Richard D., 980  
 Jeffery, John C., 993  
 Joo, Young J., 984  
 Jorba, Xavier, 965  
 Kamezawa, Makoto, 964  
 Kawate, Tomohiko, 991  
 Koga, Miho, 988  
 Küppers, Heinz-Josef, 979  
 Kurishima, Susumu, 988  
 Lahoz, Fernando, 958  
 Leeper, Finian J., 961  
 Levy, Joseph, 956  
 Liu, Hsing-Jang, 997  
 Lopez, José A., 958  
 Lunell, S., 949  
 Lvov, Yury M., 970  
 McArdle, Patrick, 959  
 McGinley, John, 959  
 Maeda, Jusei, 964  
 Manning, Hartford W., 972  
 Meetsma, Auke, 951  
 Miyamoto, Yasunobu, 999  
 Moore, Adrian J., 970  
 Munakata, Yoshihito, 964  
 Nakagawa, Masako, 991  
 Naoshima, Yoshinobu, 964  
 Natori, Makoto, 988  
 Nguyen, Minh Tho, 989  
 Nicholls, Julian, 980  
 Nishiyama, Tadashi, 964  
 Niwa, Seiji, 982  
 Nuber, Bernhard, 979  
 Ogawa, Seiichiro, 994, 999  
 Ohtsuka, Masami, 994  
 O'Neill, Ian K., 955  
 Orpen, A. Guy, 980  
 Petty, Michael C., 970  
 Philip, Abraham, 984  
 Pitner, J. Bruce, 984  
 Pringle, Paul G., 980  
 Ralitsch, Milan, 997  
 Reid, Gillian, 974  
 Sahetchian, K. A., 949  
 Schenk, Kurt, 963  
 Schröder, Martin, 974  
 Seba, H. B., 996  
 Sekizuka, Norihiro, 988  
 Sheerin, David, 959  
 Smith, David H. C., 961  
 Soai, Kenso, 982  
 Solari, Euro, 963  
 Sostero, Silvana, 980  
 Sundermeyer, Jorg, 985  
 Suwama, Masami, 994  
 Tachibana, Hojun, 964  
 Tobe, Takahiko, 994  
 Torres, Josep L., 965  
 Traverso, Orazio, 980  
 Triggle, David J., 984  
 Valencia, Gregorio, 965  
 Vogt, Walter, 968  
 Weiss, Johannes, 979  
 Went, Michael J., 993  
 Wernick, David L., 956  
 Wittenberger, Steven J., 953  
 Wolff, Artur, 968  
 Woollam, Stephen F., 985  
 Xaus, Núria, 965  
 Yamazaki, Hitoshi, 991  
 Yazbek, Ahmed, 956  
 Yoshioka, Ken-ichiro, 988  
 Zabel, F., 949

# ROYAL SOCIETY OF CHEMISTRY

## NEW PUBLICATIONS

### Dynamic Properties of Biomolecular Assemblies

Edited by S.E. Harding, *University of Nottingham* and A.J. Rowe, *University of Leicester*.

In this important new book the authors have sought to cover recent advances in a range of techniques that can be regarded as 'Dynamic' (Hydrodynamics, NMR, Dynamic Light Scattering, Fluorescence Anisotropy Decay and Electro-Optics), and their application to specific assemblies of biological macromolecules: assemblies involving proteins, nucleic acids and glycoconjugates. Some important advances in the capture and analysis of data (in many cases of the notoriously difficult 'multi-exponential' type) are identified. In vivo, assemblies of biological macromolecules do not always exist in a dilute solution environment – normally far from it – and some attention is paid to the dynamic properties of more concentrated dispersions.

*Special Publication No 74*  
Hardcover viii+376 pp  
ISBN 0 85186 896 7 (1989)  
Price £45.00

### Biochemical Approaches to Cellular Calcium

**Methodological Surveys in Biochemistry and Analysis Volume 19(B)**

Edited by Eric Reid, *Guildford Academic Associates*, G.M.W. Cook, *University of Cambridge* and J.P. Luzio, *University of Cambridge*.

*Methodological Surveys in Biochemistry and Analysis* is divided into two sub-series, A: Analysis and B: Biochemistry, which are published alternately. A: Focuses on determining drugs in body fluids, the study of trace organics, and subtle chromatography. B: Focuses on cellular aspects of biochemistry, with different themes relevant to biochemical pharmacology including endocrinology, pathology and muscle function. Each book is an integrated compendium of edited articles, with authoritative international authorship. All volumes contain a thorough subject index and sub-series A has an analyte index too.

Hardcover xvi+496 pp  
ISBN 0 85186 926 2 (1989)  
Price £65.00

### Biotransformations

**A Survey of the Biotransformations of Drugs and Chemicals in Animals**

Edited by David R. Hawkins *Huntingdon Research Centre*

The series has been devised to provide an up-to-date survey of the literature on the biotransformation of pharmaceuticals, pesticides, food additives, and environmental and industrial chemicals in animals. The objective is to provide a comprehensive data base which will allow an increased awareness of patterns in species differences and the influence of chemical structure on biotransformation pathways.

The material has been collated into chemical classes but an additional feature is the definition and allocation of key functional groups for each compound. The functional groups selected are those commonly associated with biotransformation. Indexing these functional groups provides ready access to reports on compounds containing common structural features. An additional index of biotransformation processes and compound names further increases the accessibility of relevant information.

Volume 2  
Hardcover xx+496 pp  
ISBN 0 85186 167 9 (1990)  
Price £79.50

Volume 1  
Hardcover xxii+512 pp  
ISBN 0 85186 157 1 (1989)  
Price £75.00

### Calixarenes

**Series: Monographs in Supramolecular Chemistry**

By C. David Gutsche, *Washington University, St. Louis, USA*.

#### Description and Contents

*Calixarenes* is the first book to be published in the new 'Monographs in Supramolecular Chemistry' series and is also the first complete survey available of this rapidly developing field. It provides a fascinating and lively account of the history, development and applications of calixarenes, which are probably the world's most readily available synthetic molecular baskets. These basket-shaped compounds possess the ability to hold metal ions, as well as molecules, in their interior and as a result of their extraordinarily easy synthesis from phenols and aldehydes are receiving increasingly wide attention.

Hardcover xii+224 pp  
ISBN 0 85186 916 5 (1989)  
Price £39.50

Standing Order Price for this title for customers placing an order for all titles in the series £35.00

ROYAL  
SOCIETY OF  
CHEMISTRY



Information  
Services

**To Order**, Please write to the: Royal Society of Chemistry, Distribution Centre, Blackhorse Road, Letchworth, Herts SG6 1HN. UK. or telephone (0462) 672555 quoting your credit card details. We can now accept Access/Visa/MasterCard/Eurocard.

**For further information**, please write to the:

Royal Society of Chemistry, Sales and Promotion Department, Thomas Graham House, Science Park, Milton Road, Cambridge CB4 4WF. UK.

**RSC Members** should obtain members prices and order from:

The Membership Affairs Department at the Cambridge address above.