JOURNAL OF THE CHEMICAL SOCIETY

Chemical Communications

Number 11 1985

CONTENTS

- 682 Applications of Consecutive Radical Addition-Elimination Reactions in Synthesis Jack E. Baldwin, David R. Kelly
- 684 Electroactive Thin Films from the Anodic Electropolymerisation of Iron(II) and Ruthenium(II) Tris(N-bipyridylpyrrole) Complexes Jeffrey G. Eaves, Hugh S. Munro, David Parker
- 686 Formal Dyotropic Rearrangements of N-Chloroamines catalysed by Alumina J. W. Davies, J. R. Malpass, M. P. Walker
- 687 Intramolecular π-Participation in Displacement of a Nucleofuge from Nitrogen M. L. Durrant, J. R. Malpass, M. P. Walker
- 689 The Radical Anion of 1,8-Diphenylnaphthalene: Re-examination of E.S.R. and ENDOR Spectra Fabian Gerson, René Heckendorn, Reinhart Möckel
- 690 Tandem Additions of Cuprates to Benzynes. A Regioselective Synthesis of 3-Alkyl or Aryl-2-substituted Benzoic Acids A. I. Meyers, Paul D. Pansegrau
- 691 Rate-limiting Hemiacetal Breakdown in the Aqueous Bromination of α-Methoxystyrene V. M. Kanagasabapathy, Robert A. McClelland
- 692 A Comparison of the Ligand Behaviour of Ph₂AsCH₂AsPh₂ (dpam) with that of Ph₂PCH₂PPh₂ (dppm) in Mono- and Bi-metallic Platinum Complexes Grant B. Jacobsen, Bernard L. Shaw
- 693 Tellurocarbohydrates Joanna Czyżewska-Chlebny, Maria Michalska
- 695 Highly Oriented Fibres of Discotic Liquid Crystals Long Y. Chiang, C. R. Safinya, N. A. Clark, K. S. Liang, A. N. Bloch
- 696 Formation and Reactions of 1,4,2-Dithiazolium Cations Derek J. Greig, Michael McPherson, R. Michael Paton, John Crosby
- 697 Dehydrosilylation of Alkenylsilanes Utilizing Polyvalent Organoiodine Compounds Masahito Ochiai, Kenzo Sumi, Yoshimitsu Nagao, Eiichi Fujita, Masao Arimoto, Hideo Yamaguchi
- 699 A Stereoselective Total Synthesis of (±)-Dihydrosecologanin Aglucone Richard T. Brown, Martin F. Jones
- 700 A Stereospecific Dimerization of Norbornadiene Derivatives and the Crystal Structure of Heptacyclo-[6.6.0.02.6.03.13.04.11.05.9.010.14] tetradecane Tahsin J. Chow, Ling-Kang Liu, Yunn-Shin Chao
- 702 Synthesis of a Photoaffinity-labelled Analogue of 1,25-Dihydroxyvitamin D₃ Rahul Ray, Sally Ann Holick, Michael F. Holick
- 703 The First Dinuclear Copper(II) Complex bridged by a Single Thiolate-sulphur Atom: Synthesis, Properties, and Structure Nobuo Aoi, Yumiko Takano, Hiroshi Ogino, Gen-etsu Matsubayashi, Toshio Tanaka
- 705 Cyclization Reaction of 3,20-Bis(ethylenedioxy)-9,11-seco-c-nor-5α-pregnane-9β,11-diol into 17α-Acetyl-11-oxa-c-nor-D-homo-5α-androstan-3-one Tsukasa Iwadare, Hajime Nagano, Michio Shiota
- 706 The Etioporphyrins of Oil Shale: Structural Evidence for their Derivation from Chlorophyll Christopher J. R. Fookes
- 709 Irreversible Charge-transport through Films of Electropolymerized 1,1'-Bis(chloromethyl)ferrocene Hiroshi Nishihara, Kunitsugu Aramaki
- 710 Computer Modelling of Metal Ion Recognition. Simulation of the Relative Thermodynamic Stabilities of the Nickel Complexes of Related O₂N₃-Donor Macrocyclic Ligands Kenneth R. Adam, Larry G. Brigden, Kim Henrick, Leonard F. Lindoy, Mary McPartlin, Bernadette Mimnagh, Peter A. Tasker
- 712 Capto-dative Stabilisation in Amino-substituted Radicals Iain MacInnes, John C. Walton, Derek C. Nonhebel
- 713 Electrochemical Preparation of Highly Conducting Polythiophene Films Masa-aki Sato, Susumu Tanaka, Kyoji Kaeriyama
- 714 Synthesis of S-Alkyl Alkanethioates via 1-Iodoalk-1-enyldialkylboranes Masayuki Hoshi, Yuzuru Masuda, Akira Arase
- 715 A Novel Synthesis of 2-Cyano-3,3-dimethylazetidines Paul Sulmon, Norbert De Kimpe, Niceas Schamp
- 716 Rhodium Zeolites as Bifunctional Catalysts for the Synthesis of 2-Methylhexan-3-one and Heptan-4-one from Propylene, Carbon Monoxide, and Hydrogen Edward Rode, Mark E. Davis, Brian E. Hanson
- 717 Diastereoselective Addition to an a Alkoxyatdehyde under Dipolar (Crant-Felkin) and Chelation (Crant-Cyclic) Controlled Conditions; A Stereocontrolled Synthesis of (+)-Blastmycinone Jun-ichi Uenishi, Hideo Tomozane, Masatoshi Yamato
- 719 A Singlet State-driven Photogalvanic Cell Based on the Photoreduction of 3,7-Diaminophenoxazinylium Chloride ('Oxonine') by Iron(II) Newton C. Fawcett, David Creed, Robert L. Thompson, David W. Presser
- 721 Hydrolytic Cleavage of the Cr-Cr Triple Bond in (C₅Me₅)₂Cr₂(CO)₄. The Formation and Crystal Structure of [(C₅Me₅)₄Cr₄(μ-OH)₆](BF₄)₂, an Adamantane Analogue **D. Wormsbächer, K. M. Nicholas, A. L. Rheingold**
- 723 3,8,17-Triethyl-2,7,12,18-tetramethylporphyrin: a Widely-occurring Pigment of Chlorophyll Origin M. Inês Chicarelli, George A. Wolff, James R. Maxwell

i

- 724 Synthesis of the C₃₀ Desethylaetioporphyrin from Petroleum Paul J. Clewlow, Anthony H. Jackson, Ian Roberts
- 726 On the Structure of 1:1 Adducts of Mesoionic Compounds with Isocyanates Masashi Hamaguchi, Toshikazu Nagai
- 728 The Solution Structure of [Rh(COMe)(CO)₂I₃] and the Absence of Methyl Migration in [Rh₂(COMe)₂(CO)₂I₆]² Alexander G. Kent, Brian E. Mann, Christopher P. Manuel
- 729 High-pressure I.R. Spectroscopic Evidence of Acetyl and Acetate Species Directly Formed in CO-H₂ Conversion on SiO₂-Supported Rh and Rh-Mn Catalysts Takakazu Fukushima, Hironori Arakawa, Masaru Ichikawa
- 731 Synthesis, Characterization, and Crystal Structure of the Dimeric, Paramagnetic Cobalt(0) Complex {[MeC(CH₂-PPh₂)₃Co]₂(μ-N₂)} Franco Cecconi, Carlo A. Ghilardi, Stefano Midollini, Simonetta Moneti, Annabella Orlandini, Mauro Bacci
- 733 Evidence for Formation of Aggregates of Platinum(II) Complexes Anchored on Phosphinated SiO₂ by High-resolution Electron Microscopy Andrei L. Chuvilin, Boris L. Moroz, Vladimir I. Zaikovski, Vladimir A. Likholobov, Yurii I. Yermakov
- 735 Isotope Labelling Studies on the Ruthenium-catalysed Hydroformylation of Ethylene: Indirect Evidence for Catalysis at Intact Clusters Georg Süss-Fink, Gerhard Herrmann
- 737 Chiral Bicycles from Ribonolactone John Mann, Alison Thomas
- 738 The Identification of a Hydroxylated Pyrrolidine Derivative from Castanospermum australe Robert J. Nash, E. Arthur Bell, George W. J. Fleet, Richard H. Jones, J. Michael Williams
- 740 The Effect of Temperature on the ²⁹Si Magic Angle Spinning N.M.R. Spectrum of Highly Siliceous ZSM-5 Colin A. Fyfe, Gordon J. Kennedy, George T. Kokotailo, James R. Lyerla, William W. Fleming
- 742 Reaction of 1,3-Dithiane Anions with Nitriles: Generation of Primary Aminoketene Thioacetals Philip C. Bulman Page, Monique B. van Niel, P. Howard Williams
- 744 Cluster Chemistry. Stepwise Hydrogenation of an Acetylide Ligand to Carbon and Methyl on a Ru₅ Cluster. X-Ray Structures of [Ru₅(μ-H)(μ₅-C=CHPPh₂)(μ-PPh₂)(CO)₁₃] and [Ru₅C(μ-H)₃(μ-PPh₂)(CO)₁₁(PMePh₂)] Michael I. Bruce, Brian W. Skelton, Allan H. White, Michael L. Williams
- 746 Condensed Tannins: A Proposed Route to 2R,3R-(2,3-cis)-Proanthocyanidins Richard W. Hemingway, Peter E. Laks

Corrigenda

- 748 Glycinoeclepin A, a Natural Hatching Stimulus for the Soybean Cyst Nematode Akio Fukuzawa, Akio Furusaki, Mitsuhiko Ikura, Tadashi Masamune
- 748 Visualization of Chromatography Columns by N.M.R. Imaging Laurance D. Hall, Vasanthan Rajanayagam

AUTHOR INDEX

Adam, Kenneth R., 710 Aoi, Nobuo, 703 Arakawa, Hironori, 729 Aramaki, Kunitsugu, 709 Arase, Akira, 714 Arimoto, Masao, 697 Bacci, Mauro, 731 Bajusz, Sándor, 681 Baldwin, Jack E., 682 Bell, E. Arthur, 738 Bloch, A. N., 695 Brigden, Larry G., 710 Brown, Richard T., 699 Bruce, Michael I., 744 Bulman Page, Philip C., 742 Cecconi, Franco, 731 Chao, Yunn-Shin, 700 Chiang, Long Y., 695 Chicarelli, M. Inês, 723 Chow, Tahsin J., 700 Chuvilin, Andrei L., 733 Clark, N. A., 695 Clewlow, Paul J., 724 Creed, David, 719 Crosby, John, 696 Czyżewska-Chlebny, Joanna, 693 Davies, J. W., 686 Davis, Mark E., 716 De Kimpe, Norbert, 715 Durrant, M. L., 687 Eaves, Jeffrey G., 684 Eckle, Emil, 681 Fawcett, Newton C., 719 Fleet, George W. J., 738 Fleming, William W., 740 Fookes, Christopher J. R., 706

Fujita, Eiichi, 697 Fukushima, Takakazu, 729 Fukuzawa, Akio, 748 Furusaki, Akio, 748 Fyfe, Colin A., 740 Gerson, Fabian, 689 Ghilardi, Carlo A., 731 Greig, Derek J., 696 Hall, Laurance D., 748 Hamaguchi, Masashi, 726 Hanson, Brian E., 716 Heckendorn, René, 689 Hemingway, Richard W., 746 Henrick, Kim, 710 Herrmann, Gerhard, 735 Holick, Michael F., 702 Holick, Sally Ann, 702 Hoshi, Masayuki, 714 Ichikawa, Masaru, 729 Ikura, Mitsuhiko, 748 Iwadare, Tsukasa, 705 Jackson, Anthony H., 724 Jacobsen, Grant B., 692 Jones, Martin F., 699 Jones, Richard H., 738 Kaeriyama, Kyoji, 713 Kanagasabapathy, V. M., 691 Kelly, David R., 682 Kennedy, Gordon J., 740 Kent, Alexander G., 728 Kokotailo, George T., 740 Laks, Peter E., 746 Liang, K. S., 695 Likholobov, Vladimir A., 733 Lindoy, Leonard F., 710 Liu, Ling-Kang, 700 Lyerla, James R., 740 McClelland, Robert A., 691

MacInnes, Iain, 712 McPartlin, Mary, 710 McPherson, Michael, 696 Malpass, J. R., 686, 687 Mann, Brian E., 728 Mann, John, 737 Manuel, Christopher P., 728 Masamune, Tadashi, 748 Masuda, Yuzuru, 714 Matsubayashi, Gen-etsu, 703 Maxwell, James R., 723 Meyers, A. I., 690 Michalska, Maria, 693 Midollini, Stefano, 731 Mimnagh, Bernadette, 710 Möckel, Reinhart, 689 Moneti, Simonetta, 731 Moroz, Boris L., 733 Munro, Hugh S., 684 Nagai, Toshikazu, 726 Nagano, Hajime, 705 Nagao, Yoshimitsu, 697 Nash, Robert J., 738 Nicholas, K. M., 721 Nishihara, Hiroshi, 709 Nonhebel, Derek C., 712 Ochiai, Masahito, 697 Ogino, Hiroshi, 703 Orlandini, Annabella, 731 Pansegrau, Paul D., 690 Parker, David, 684 Paton, R. Michael, 696 Presser, David W., 719 Rajanayagam, Vasanthan, 748 Ray, Rahul, 702 Rheingold, A. L., 721 Roberts, Ian, 724 Rode, Edward, 716

Safinya, C. R., 695 Sato, Masa-aki, 713 Schamp, Niceas, 715 Shaw, Bernard L., 692 Shiota, Michio, 705 Skelton, Brian W., 744 Stezowski, John J., 681 Sulmon, Paul, 715 Sumi, Kenzo, 697 Süss-Fink, Georg, 735 Takano, Yumiko, 703 Tanaka, Susumu, 713 Tanaka, Toshio, 703 Tasker, Peter A., 710 Thomas, Alison, 737 Thompson, Robert L., 719 Tomozane, Hideo, 717 Uenishi, Jun-ichi, 717 van Niel, Monique B., 742 Walker, M. P., 686, 687 Walton, John C., 712 White, Allan H., 744 Williams, J. Michael, 738 Williams, Michael L., 744 Williams, P. Howard, 742 Wolff, George A., 723 Wormsbächer, D., 721 Yamaguchi, Hideo, 697 Yamato, Masatoshi, 717 Yermakov, Yurii I., 733 Zaikovski, Vladimir I., 733



TWO NEW BOOKS FOR TEACHERS AND STUDENTS OF CHEMISTRY RSC PAPERBACKS

In 1983 The Royal Society of Chemistry introduced a new series of inexpensive texts for students and teachers. Topics covered relate to those subjects which are commonly featured in courses on chemistry and related areas, which are currently taught in schools, universities

Prices quoted below apply to both RSC Members and non-RSC Members.

FOOD: The Chemistry of its Components



By T. P. Coultate

Softcover 202pp 0 85186 483 X (1984)

Price £5.95 (\$11.00)

This book gives a detailed account of the chemistry of the principal substances of which our food is composed. Both the macro-components, the carbohydrates, lipids and proteins, which can be classified by their chemical structures, and the micro-components, the colours, flavours, vitamins and preservatives, which are classified in terms of function are considered. Throughout the book, Dr Coultate's theme is the relationship between the chemical structure of a substance and its contribution to the properties and behaviour of foodstuffs-whether observed in the laboratory, the factory, the kitchen or the dining room.

Contents:

Introduction, carbohydrates, lipids, proteins, colours, flavours, vitamins, preservatives, EEC numbers of food additives. Subject index. This book will be of particular benefit to students and teachers of food science and related courses in universities, colleges of further education and schools.

ORDERING RSC Members should send their orders to: The Membership Officer, The Royal Society of Chemistry, 30 Russell Square, London WC1B 5DT. Non-RSC Members should send their orders to: The Royal Society of Chemistry, Distribution Centre, Blackhorse Road, Letchworth, Herts SG6 1HN



The Royal Society of Chemistry, **Burlington House Piccadilly** London W1V 0BN



WATER **Revised 1st Edition**

By Felix Franks

Softcover 102pp 0 85186 473 2 (1984)

Price £2.50 (\$6.00)

The book considers the present state of our knowledge of liquid water, its remarkable physical properties and how these give rise to a unique structure, its influence on the interactions between solutes, its role in maintaining biologically active structures, its involvement in chemical reactions and the problems posed by its management and in providing sufficient amounts of water of adequate quality.

An understanding of the behavioural properties of water is fundamental to gaining an appreciation of many scientific processes and principles. Science students and teachers will, therefore, find Water not only interesting reading, but also of considerable relevance to their studies.

Contents:

Occurrence, importance and physical properties; The place of water in the general classification of liquids; Isotopic composition; The structure of the water molecule and the nature of the hydrogen bond in water: Ice - its structure and dynamics; The structure of liquid water; The dynamic properties of liquid water; Towards a molecular description of water; Aqueous solutions of simple molecules; Aqueous solutions of electrolytes; The role of water in the stabilisation of biologically significant structures; Reactions in aqueous solutions; Water in the environment - quality, availability and exploitation; Summary and future prospects.

CLASSIFIED **ADVERTISEMENTS**

University of Exeter DEMONSTRATOR IN ORGANIC CHEMISTRY

Applications are invited for a Demonstratorship in Organic Chemistry, tenable from 1 October 1985 for a period of two years. Applicants should have a Ph.D degree. The salary will be £7520 in the first year and £7980 in the second year (under review).

In addition to teaching duties, the successful candidate will be expected to actively pursue research. Further particulars may be obtained from the Personnel Office, University of Exeter, Exeter EX4 4QJ, to whom applications (five copies) with the names of two referees should be sent by 17 June 1985. Please quote reference no. 3428.

THE UNIVERSITY OF LEEDS **DEPARTMENT OF ORGANIC AND PHYSICAL** CHEMISTRY

LYOTROPIC LIQUID CRYSTAL RESEARCH

Applications are invited for two posts of Research Fellow tenable jointly in the above Departments for work on novel lyotropic liquid crystals; the aim of the project, which is supported by the SERC, is to exploit the interaction between complex amphiphilic molecules and solvent to engineer ordered materials. One person is required for synthetic work and should have a PhD or equivalent experience in Organic Chemistry. Another person is required for physical studies and should have a PhD or equivalent experience in Physical Chemistry, Physics or a related subject.

Both posts available from 1 October 1985 for a fixed term of up to two

Salary on the IA Range for Research and Analogous Staff (£7520-£12150)(under review) according to age, qualifications and experience.

Informal enquiries may be made to Dr R. J. Bushby or Dr N. Boden (Tel. 0532 431751 Ext 6375 or 6008).

Application forms and further particulars may be obtained from the Registrar, The University, Leeds LS29JT quoting reference no. 45/37. Closing date for applications 26 June