

JOURNAL OF THE CHEMICAL SOCIETY

Chemical Communications

Number 19
1984

CONTENTS

- 1249 Redox Reactions of Metal Carbonyls of Group 5A **Fausto Calderazzo, Guido Pampaloni**
- 1250 The Gelation Behaviour of Aluminosilicate Solutions containing Na^- , K^- , Cs^- , and Me_4N^- **Lesley S. Dent Glasser, Gillian Harvey**
- 1252 ^{13}C , ^{13}C Spin–Spin Coupling Constants as a Probe for Mesomeric Structures: Vitamin C **Stefan Berger**
- 1253 Double Aldol Condensation: Stereoselective Synthesis of Masked and Un-masked β, β' -Dihydroxyketones **Rita Annunziata, Mauro Cinquini, Franco Cozzi, Angelo Restelli**
- 1255 In the Presence of Imidazole, Iron- and Manganese-porphyrins catalyse the Epoxidation of Alkenes by Alkyl Hydroperoxides **Daniel Mansuy, Pierrette Battioni, Jean-Paul Renaud**
- 1257 Novel Trithioanhydride Complexes of Transition Metals; X-Ray Crystallographic Characterization of $[(\eta\text{-C}_5\text{H}_5)(\text{CO})\text{FeSC}(\text{Fp})\text{SCS}(\text{Fp})]\text{SO}_3\text{CF}_3$, $[\text{Fp} = \text{Fe}(\text{CO})_2(\eta\text{-C}_5\text{H}_5)]$ **Vincenzo G. Albano, Dario Braga, Luigi Busetto, Magda Monari, Valerio Zanotti**
- 1259 Chelation-controlled Regioselective Epoxide–Carbonyl Rearrangement: a Ring Enlargement Route to (\pm)-Modhephene **Yoshito Tobe, Shinya Yamashita, Toshiro Yamashita, Kiyomi Kakiuchi, Yoshinobu Odaira**
- 1260 Selective Alkane C–C Bond Cleavage *via* Prior Dehydrogenation by a Transition Metal Complex **Robert H. Crabtree, Robert P. Dion**
- 1261 Exchange Rates between Silicate Anions in Alkaline Aqueous Solution **Clifford J. Creswell, Robin K. Harris, Per T. Jageland**
- 1263 A Versatile New Method for the Synthesis of Various Pyrrolidin-1-oxyl Fatty Acids **Kálmán Hideg, László Lex**
- 1265 9,21-Didehydroryanodine: a New Principal Toxic Constituent of the Botanical Insecticide *Ryania* **Andrew L. Waterhouse, Ian Holden, John E. Casida**
- 1266 2,4,4,6-Tetrabromocyclohexa-2,4-dienone: a New Electron Acceptor in the Photosensitized Oxidation of Unsaturated Substrates **Luigi Lopez, Vincenzo Calò**
- 1268 Chiral Cyclohexanes From Carbohydrates: Successful Carbocyclisation of a D-Arabino-Hex-5-enopyranoside Derivative **Françoise Chretien, Yves Chapleur**
- 1270 Chemiluminescent Reactions of Bis(η^5 -pentamethylcyclopentadienyl)ytterbium Derivatives **Alan C. Thomas, Arthur B. Ellis**
- 1271 Interatomic Potentials for SiO_2 **M. J. Sanders, M. Leslie, C. R. A. Catlow**
- 1273 Synthesis of Karahanaenol from Geraniol *via* an Allylsilane **Dong Wang, Tak-Hang Chan**
- 1274 Evidence of Metal–Support Interaction for an $\text{Ni/TiO}_2\text{-SiO}_2$ Catalyst **Edmond I. Ko, Norman J. Wagner**
- 1276 A Paramagnetic Cobalt Carbonyl Cluster Anion with an Encapsulated Silicon Atom; Preparation and Structure of $[\mu_8\text{-SiCo}_9(\text{CO})_{21}]^{2-}$ **Kenneth M. Mackay, Brian K. Nicholson, Ward T. Robinson, Anthony W. Sims**
- 1277 Fully Collaborative Guest Binding by a Double Cyclodextrin Host **Kahee Fujita, Seiji Ejima, Taiji Imoto**
- 1278 Identification of Individual Couplings in E.S.R. Spectra by Deuteriation and Autocorrelation **Richard A. Jackson, Christopher J. Rhodes**
- 1280 Chemistry of the Annonaceae. Structures of Uvarindoles A–D, Four New Benzylated Indole Alkaloids from *Uvaria angolensis* **Peter G. Waterman, Ilias Mohammad**
- 1282 Infrared Spectra of Adsorbed Molecules on Thin Silica Films **B. A. Morrow, Carl P. Tripp, Richard A. McFarlane**
- 1283 The X-Ray Crystal Structure of *trans*-Bis(sulphur dioxide)tetrakis(triphenylphosphine oxide)manganese(II) Di-iodide, a Compound which undergoes Demi-reversible Binding of Sulphur Dioxide: the First Crystallographically Characterised Example of O-bonded Sulphur Dioxide in a Transition Metal Complex **George A. Gott, John Fawcett, Charles A. McAuliffe, David R. Russell**
- 1284 Allene Transfer Reactions. A New Synthesis of Terminal Allenes **Jack E. Baldwin, Robert M. Adlington, Amit Basak**
- 1286 Selective Ruthenium Carbonyl Catalysed Reductive Carbonylation of Aromatic Nitro Compounds to Carbamates **Sergio Cenini, Maddalena Pizzotti, Corrado Crotti, Francesca Porta, Girolamo La Monica**
- 1287 Palladium-catalysed Vinylation of Organic Halides under Solid–Liquid Phase Transfer Conditions **Tuyet Jeffery**
- 1289 Synthesis of Racemic 4-*t*-Butoxycarbonyl-8-oxo-1,3,4-triazabicyclo[4.2.0]oct-2-ene-2-carboxylates: a Novel Class of β -Lactam Derivatives **Chandra M. Pant, Richard J. Stoodley Andrew Whiting, David J. Williams**

- 1291 An Unusual Photo-induced Conformational Polymorphism: a Crystallographic Study of Bis(*p*-methoxy)-*trans*-stilbene
Charis R. Theocharis, William Jones, C. N. Ramachandra Rao
- 1293 Photochemical Reductive Dimerization of Quinoxalin-2-ones and 1,4-Benzoxazin-2-one Takehiko Nishio, Yoshimori Omote
- 1295 Dioxododecaisopropoxytungsten. Oxygen Atom Abstraction from Acetone in Reactions with Hexaisopropoxyditungsten($W\equiv W$) Timothy P. Blatchford, Malcolm H. Chisholm, Kirsten Folting, John C. Huffman
- 1296 Iodine(III) Bis-fluorosulphate Iodide. The X-Ray Crystal Structure of $I(OSO_2F)_2$ Michael J. Collins, Georges Dénès, Ronald J. Gillespie
- 1298 Reductive Radical Decarboxylation of Amino-acids and Peptides Derek H. R. Barton, Yolande Hervé, Pierre Potier, Josiane Thierry
- 1299 An Enantiospecific Synthesis of (+)-Retronecine and Related Alkaloids J. Grant Buchanan, Gurdial Singh, Richard H. Wightman
- 1301 Biosynthesis of the Polyketide Antibiotic ICI139603 in *Streptomyces longisporoflavus*: Assignment of the ^{13}C N.M.R. Spectrum by Two-dimensional Methods, and Determination of the Origin of the Carbon Atoms J. Mark Bulsing, Ernest D. Laue, Finian J. Leeper, James Staunton, David H. Davies, Graham A. F. Ritchie, Alan Davies, Alan B. Davies, Richard P. Mabelis
- 1302 Biosynthesis of the Polyether Antibiotic ICI139603 in *Streptomyces longisporoflavus*: Investigation of Deuterium Retention after Incorporation of $CD_3^{13}CO_2H$, $^{13}CD_3CO_2H$, and $CH_3CD_2^{13}CO_2H$ using 2H N.M.R. and edited ^{13}C N.M.R. Spectra David M. Doddrell, Ernest D. Laue, Finian J. Leeper, James Staunton, Alan Davies, Alan B. Davies, Graham A. F. Ritchie
- 1304 A Simple Route to C-Functionalised Azaxylylenes and Diazaxylylenes Colin W. G. Fishwick, Richard C. Storr, Paul W. Manley
- 1305 A Tetranuclear Iron(II)–Sodium Complex formed from the Complexation of Sodium Ethoxide by *N,N'*-Ethylenebis-(3-hydroxy-1-methylbut-2-enylideneaminato)iron(II) Sandro Gambarotta, Fabio Corazza, Carlo Floriani, Margareta Zehnder
- 1307 A Structural and Kinetic Investigation of the Isomers of $M_2(CO)_8(CNBut)_2$ ($M = Mn, Re$) David J. Robinson, Gillian W. Harris, Jan C. A. Boeyens, Neil J. Coville
- 1309 Regulation of the Point of Zero Charge and Surface Acidity Constants of $\gamma-Al_2O_3$, using Sodium and Fluoride Ions as Modifiers L. Vordonis, P. G. Koutsoukos, A. Lycourghiotis
- 1310 Equilibrium and Activation Energetics, and Molecular Structures in the Water-catalysed Lactim–Lactam Tautomerism of 2-Pyridone: an *ab initio* Molecular Orbital Study Martin J. Field, Ian H. Hillier, Martyn F. Guest
- 1312 Synchronous Pyramidal Inversion of Chalcogen Atom Pairs in Trimethylplatinum(IV) Halide Complexes with Dithia- and Diselena-cyclopentanes. X-Ray Crystal Structure of $[(PtIME_3)_2(Me_2\overline{C}CH_2SeSe\overline{C}H_2)]$ Edward W. Abel, Pramod K. Mittal, Keith G. Orrell, Vladimir Šik, T. Stanley Cameron
- 1313 The Rhodium Catalysed Co-oxygenation of *cis*-Cyclo-octene Gordon Read, Janet Shaw
- 1315 Nickel(II)–Cyclam: an Extremely Selective Electrocatalyst for Reduction of CO_2 in Water Marc Beley, Jean-Paul Collin, Romain Ruppert, Jean-Pierre Sauvage

AUTHOR INDEX

- Abel, Edward W., 1312
 Adlington, Robert M., 1284
 Albano, Vincenzo G., 1257
 Annunziata, Rita, 1253
 Baldwin, Jack E., 1284
 Barton, Derek H. R., 1298
 Basak, Amit , 1284
 Battioni, Pierrette, 1255
 Beley, Marc, 1315
 Berger, Stefan, 1252
 Blatchford, Timothy P., 1295
 Boeyens, Jan C. A., 1307
 Braga, Dario, 1257
 Buchanan, J. Grant, 1299
 Bulsing, J. Mark, 1301
 Busetto, Luigi, 1257
 Calderazzo, Fausto, 1249
 Calò, Vincenzo, 1266
 Cameron, T. Stanley, 1312
 Casida, John E., 1265
 Catlow, C. R. A., 1271
 Cenini, Sergio, 1286
 Chan, Tak-Hang, 1273
 Chapleur, Yves, 1268
 Chisholm, Malcolm H., 1295
 Chretien, Françoise, 1268
 Cinquini, Mauro, 1253
 Collin, Jean-Paul, 1315
 Collins, Michael J., 1296
 Corazza, Fabio, 1305
 Coville, Neil J., 1307
 Cozzi, Franco , 1253
 Crabtree, Robert H., 1260
 Creswell, Clifford J., 1261
 Crotti, Corrado, 1286
 Davies, Alan, 1301, 1302
 Davies, Alan B., 1301, 1302
 Davies, David H., 1301
 Dénès, Georges, 1296
 Dent Glasser, Lesley S., 1250
 Dion, Robert P., 1260
 Doddrell, David M., 1302
 Ejima, Seiji, 1277
 Ellis, Arthur B., 1270
 Fawcett, John , 1283
 Field, Martin J., 1310
 Fishwick, Colin W. G., 1304
 Floriani, Carlo, 1305
 Folting, Kirsten, 1295
 Fujita, Kahee , 1277
 Gambarotta, Sandro, 1305
 Gillespie, Ronald J., 1296
 Gott, George A., 1283
 Guest, Martyn F., 1310
 Harris, Gillian W., 1307
 Harris, Robin K., 1261
 Harvey, Gillian , 1250
 Hervé, Yolande, 1298
 Hideg, Kàlmàn, 1263
 Hillier, Ian H., 1310
 Holden, Ian, 1265
 Huffman, John C., 1295
 Imoto, Taiji, 1277
 Jackson, Richard A., 1278
 Jageland, Per T., 1261
 Jeffery, Tuyet, 1287
 Jones, William, 1291
 Kakiuchi, Kiyomi, 1259
 Ko, Edmond I., 1274
 Koutsoukos, P. G., 1309
 La Monica, Girolamo , 1286
 Laue, Ernest D., 1301, 1302
 Leeper, Finian J., 1301, 1302
 Leslie, M., 1271
 Lex, Lászlò , 1263
 Lopez, Luigi , 1266
 Lycourghiotis, A., 1309
 Mabelis, Richard P., 1301
 McAuliffe, Charles A., 1283
 McFarlane, Richard A., 1282
 Mackay, Kenneth M., 1276
 Manley, Paul W., 1304
 Mansuy, Daniel, 1255
 Mittal, Pramod K., 1312
 Mohammad, Ilias, 1280
 Monari, Magda, 1257
 Morrow, B. A. , 1282
 Nicholson, Brian K., 1276
 Nishio, Takehiko, 1293
 Odaira, Yoshinobu, 1259
 Omote, Yoshimori, 1293
 Orrell, Keith G., 1312
 Pampaloni, Guido, 1249
 Pant, Chandra M., 1289
 Pizzotti, Maddalena, 1286
 Porta, Francesca, 1286
 Potier, Pierre , 1298
 Rao, C. N. Ramachandra, 1291
 Read, Gordon, 1313
 Renaud, Jean-Paul , 1255
 Restelli, Angelo, 1253
 Rhodes, Christopher J., 1278
 Ritchie, Graham A. F., 1301, 1302
 Robinson, David J., 1307
 Robinson, Ward T., 1276
 Ruppert, Romain, 1315
 Russell, David R., 1283
 Sanders, M. J., 1271
 Sauvage, Jean-Pierre, 1315
 Shaw, Janet, 1313
 Šik, Vladimir, 1312
 Sims, Anthony W. , 1276
 Singh, Gurdial, 1299
 Staunton, James, 1301, 1302
 Stoodley, Richard J., 1289
 Storr, Richard C., 1304
 Theocharis, Charis R. , 1291
 Thierry, Josiane, 1298
 Thomas, Alan C., 1270
 Tobe, Yoshito, 1259
 Tripp, Carl P., 1282
 Vordonis, L., 1309
 Wagner, Norman J., 1274
 Wang, Dong, 1273
 Waterhouse, Andrew L., 1265
 Waterman, Peter G., 1280
 Whiting, Andrew, 1289
 Wightman, Richard H., 1299
 Williams, David J., 1289
 Yamashita, Shinya, 1259
 Yamashita, Toshiro, 1259
 Zanotti, Valerio, 1257
 Zehnder, Margareta, 1305

Introducing *Langmuir*—the unique journal of surface and colloid chemistry!

Premiere Issue
January–February
1985

Langmuir

The ACS Journal of Surfaces and Colloids

Arthur Adamson, Editor
University of Southern California
Arthur Hubbard, Associate Editor
University of California at Santa Barbara

This new journal published by the American Chemical Society fills the void existing in current literature available today—*Langmuir's* broad coverage will bring together authoritative papers from all aspects of this major field of chemistry!

Langmuir will include fundamental and applied papers covering ultra-high vacuum surface chemistry and spectroscopy, heterogeneous catalysis, all aspects of interface chemistry involving fluids, and disperse systems. Specifically, *Langmuir* will publish peer-reviewed research in

✓ 'Wet' Surface Chemistry

surface tension • spread monolayers • wetting and contact angle • adsorption from solution • nucleation and fundamental aspects of flotation, detergency, emulsions, foams, lubrication, etc.

✓ Electrochemistry

related to interfacial structure and processes

✓ 'UHV' Surface Chemistry

solid surfaces in ultra-high vacuum including surface structure, composition and spectroscopy • fundamental papers in heterogeneous catalysis

✓ Disperse Systems

colloidal suspensions including aerosols • microemulsions • biological and polymeric colloids • and membrane systems

In bimonthly issues of *Langmuir*, you will find experimental and theoretical original papers, letters to the editor, and book reviews, as well as some selected symposium collections. Papers having applied aspects will be included. And, published by the American Chemical Society, *Langmuir* will benefit from the Society's vast international network of scientists and editorial resources.

Note to Authors: *Langmuir* will not have page charges.

Subscription Information

1985 Rates	U.S.	Foreign Air Freight Included
Members	\$49	\$ 58
Nonmembers*	\$299	\$308

*Special Offer for Institutional (Nonmember)

Subscribers: Subscribe to *Langmuir* before October 15, 1984 and save \$50 off the 1985 subscription rate. Send no payment with order. We'll bill you at the special rate.

Volume 1 No. 1 will be published January–February 1985.
ISSN: 0743-7463.

Langmuir will be published bimonthly by the
American Chemical Society

1155 16th St., N.W.
Washington, D.C. 20036

Call Toll Free
800-424-6747

Editorial Advisory Board

N.R. Armstrong, *University of Arizona* • G.T. Barnes, *University of Queensland, AUSTRALIA* • P. Biloen, *University of Pittsburgh* • K.S. Birdi, *Technical University of Denmark, DENMARK* • A.M. Bond, *Deakin University, AUSTRALIA* • B.V. Derjaguin, *Academy of Science of USSR, USSR* • D.D. Eley, *University of Nottingham, ENGLAND* • G. Ertl, *Technical University of Munich, WEST GERMANY* • J. Fendler, *Clarkson College of Technology* • T. Fort, Jr., *California Polytechnic State University* • G. Gaines, Jr., *General Electric Corporate R&D* • W.A. Goddard, III, *California Institute of Technology* • R.S. Hansen, *Iowa State University* • J. Lyklema, *Agricultural University, THE NETHERLANDS* • R.J. Madix, *Stanford University* • J.A. Mann, Jr., *Case Western Reserve University* • P. Mukerjee, *University of Wisconsin* • K.J. Mysels, *Research Consulting* • A.W. Neumann, *University of Toronto, CANADA* • R. Ottewill, *University of Bristol, ENGLAND* • G.D. Parfitt, *Carnegie-Mellon University* • H. Reiss, *University of California at Los Angeles* • H.A. Resing, *Naval Research Laboratory* • T. Rhodin, *Cornell University* • S. Ross, *Rensselaer Polytechnic University* • J. Rouquerol, *Centre de Thermodynamique et de Microcalorimétrie du CNRS, FRANCE* • R.L. Rowell, *University of Massachusetts* • R. Rye, *Sandia National Laboratory* • H. Seki, *International Business Machines* • K. Shinoda, *Yokohama National University, JAPAN* • G.A. Somorjai, *University of California at Berkeley* • W.A. Steele, *Pennsylvania State University*