

JOURNAL OF THE CHEMICAL SOCIETY

Chemical Communications

Number 19
1987

CONTENTS

- 1421 Quaternary Ammonium Salts as Bifunctional Catalysts in the Oxybromination of Aromatic Compounds by Aqueous Hydrogen Bromide/Hydrogen Peroxide **Jihad Dakka, Yoel Sasson**
- 1422 Stereospecific Synthesis of Carbocyclic Analogue of Oxazinomycin by Retrograde Aldol C–C Bond Fission under Reductive Conditions **Nobuya Katagiri, Michio Tomura, Toru Haneda, Chikara Kaneko**
- 1423 Molybdenum Hexadimethylamide **Malcolm H. Chisholm, Charles E. Hammond, John C. Huffman**
- 1424 Liquid Crystals for Non-linear Optics: Mesophases Formed by Push–Pull Stilbenes and Diacetylenes **Claudine Fouquey, Jean-Marie Lehn, Jacques Malthête**
- 1426 Allenes as Clathrate Hosts: Formation of a New Channel Network **Edwin Weber, Wilhelm Seichter, Israel Goldberg**
- 1428 Polymer-supported Chain Homologation **Steven L. Regen, Mitsuo Kodomari**
- 1429 Exchange of Dopant Ions in Polyacetylene **Joseph B. Schlenoff, James C. W. Chien**
- 1431 Synthesis and Characterization of Graphite Fluorides by Electrochemical Fluorination in Aqueous and Anhydrous Hydrogen Fluoride **H. Takenaka, M. Kawaguchi, M. Lerner, N. Bartlett**
- 1433 Influence of CO₂ on the Oxidative Coupling of Methane over a Lithium Promoted Magnesium Oxide Catalyst **Stefan J. Korf, Jan A. Roos, Niels A. Bruijn, Jan G. van Ommen, Julian R. H. Ross**
- 1434 3-Oxiranylprop-2-enals as Synthetic Building Blocks. Easy and Stereoselective Synthesis of Naturally Occurring (*E,Z*)-1,3,5-Trienes and (*E,Z*)-2,4-Dienals, Pheromones and Flavour Components **Michael Goldbach, Edgar Jäkel, Manfred P. Schneider**
- 1435 Methanol from Oxidation of Methane by Nitrous Oxide over FeZSM5 Catalysts **J. R. Anderson, P. Tsai**
- 1437 Synthesis of Novel Perfluoroalkyl Nonionic Surfactants with a Bipodal Hydrophilic Moiety **Claude Selve, El Mostafa Mourni, Jean-Jacques Delpuech**
- 1438 A Stereoselective Total Synthesis of (±)-Dihydrocorynantheol *via* Radical Cyclisation **Masataka Ihara, Nobuaki Taniguchi, Keiichiro Fukumoto, Tetsuji Kametani**
- 1440 Equilibrium Molecular-pair Treatment of Fast Bimolecular Reactions in Solution **John F. Garst**
- 1441 Biosynthesis of Three Cyclopropene-containing Sterols in the Sponge *Calyx niceaensis* **Christian Margot, Cesar A. N. Catalan, John R. Proudfoot, Guido Sodano, Donato Sica, Carl Djerassi**
- 1442 Unprecedented Reaction of a Thiocarbonyl Ylide with Carbonyl Compounds: a Novel Synthesis of 1,3-Oxathiolanes **Akira Hosomi, Shinji Hayashi, Koichiro Hoashi, Shinya Kohra, Yoshinori Tominaga**
- 1443 Desilylative Pummerer-like Rearrangement of α -Trimethylsilyl-substituted Sulphoxides and Sulphides: Formation of α -Acyloxy and α -Halogeno Sulphides **Hiroyuki Ishibashi, Hiroshi Nakatani, Kazumi Maruyama, Kenjiro Minami, Masazumi Ikeda**
- 1445 Reaction of Tin Enolates with Substituted Tricarbonylcyclohexadienylumiron Hexafluorophosphate Electrophiles: Diastereoselective Synthesis of (±)-Trichodiene **Anthony J. Pearson, Michael K. O'Brien**
- 1447 Organotellurium-mediated Synthesis of Oxazolidin-2-ones from Alkenes **Nan X. Hu, Yoshio Aso, Tetsuo Otsubo, Fumio Ogura**
- 1448 New Conducting Polymer Film: Poly(2,5-thienylenevinylene) prepared *via* a Soluble Precursor Polymer **Shingetsu Yamada, Shizuo Tokito, Tetsuo Tsutsui, Shogo Saito**
- 1449 The Intramolecular Diels–Alder Reaction with Allenic Ester Dienophiles **Helen M. Saxton, James K. Sutherland, Christopher Whaley**
- 1451 Alternative Transition States in the Cope Rearrangements of Hexa-1,5-diene **Michael J. S. Dewar, Caoxian Jie**
- 1453 Proton Transfer to the Fluorine Atom in Fluorobenzene: a Dramatic Temperature Dependence in the Gas Phase **Rod Mason, Dafydd Milton, Frank Harris**
- 1455 Crystallisation of (Hexane-1,6-diamine)–Silicalite-1 **Abraham Araya, Barrie M. Lowe**
- 1456 Formation of Bicyclo[3.2.1]octane, Bicyclo[4.2.1]nonane, and Bicyclo[3.3.1]nonane by Transannular Radical Cyclisations **Finlay MacCorquodale, John C. Walton**
- 1457 Metal Complexes that Model the Active Site of Liver Alcohol Dehydrogenase **Bernard Kaptein, Linda Wang-Griffin, Gert Barf, Richard M. Kellogg**
- 1460 Ultrasound in Lipids. Furan Formation under Ultrasonic assisted Simmons–Smith Reaction and the Effect of Cadmium and Copper as Zinc Replacers **Marcel S. F. Lie Ken Jie, Wilson L. K. Lam**

- 1461 1,3-Migration of a Phenyl Group *via* a Silicocation **Colin Eaborn, Paul D. Lickiss, Sabah T. Najim, Włodzimierz A. Stańczyk**
- 1462 An Oxidative/Reductive, Non-hydrolytic Procedure for 'Unravelling' Complex Acetals (Glycosides): a Possible Chemical Role for the *exo*-Anomeric Effect **David R. Mootoo, Vandana Date, Bert Fraser-Reid**
- 1464 On the Mechanism of Reaction of Activated Phosphoryl Compounds with Phosphoryl Anions: A Reassessment of the Role of Dioxadiphosphetanes **Paul M. Cullis, Aston D. Kaye, Stuart Trippett**
- 1466 Evidence for the Formation of Diethylsilaneselone: A Reactive Intermediate with a Silicon–Selenium Double Bond **Dennis P. Thompson, Philip Boudjouk**
- 1467 A Novel Approach to Estranes by an Intramolecular Double Michael Reaction **Masataka Ihara, Takako Takahashi, Noriko Shimizu, Yohhei Ishida, Izumi Sudow, Keiichiro Fukumoto, Tetsuji Kametani**
- 1469 $[M_4O_{12}\{MeC(NH_2)NO\}_2]^{2-}$ ($M = Mo$ or W), a Tetranuclear Complex with a μ_4 -Acetamidoximate Ligand as an Unprecedented Bridge **Valérie Chilou, Pierre Gouzerh, Yves Jeannin, Francis Robert**
- 1471 Tungstate-catalysed Oxidation of Tetrahydroquinolines with Hydrogen Peroxide: a Novel Method for Synthesis of Cyclic Hydroxamic Acids **Shun-Ichi Murahashi, Tetsuya Oda, Toshiaki Sugahara, Yoshiyuki Masui**
- 1472 Stereochemistry of Conjugate Addition to 4- and 5-Substituted α,β -Unsaturated δ -Lactones **Ian Fleming, N. Laxma Reddy, Ken Takaki, Anne C. Ware**
- 1474 Total Synthesis of a D-Ring Indole Analogue of Daunomycin **Yasumitsu Tamura, Masayuki Kirihara, Manabu Sasho, Shuji Akai, Jun-ichi Sekihachi, Ryuichi Okunaka, Yasuyuki Kita**
- 1476 Conducting Polymers from Dimethyl-2,2'-bithiophenes **Bernd Krische, Jonas Hellberg, Christina Lilja**
- 1478 Facile Displacement of an η^5 -Indenyl Ligand. Crystal Structure of the $[Rh(Me_2PCH_2CH_2PMe_2)_2]^+$ Salt of the Naked Indenyl Anion **Todd B. Marder, Ian D. Williams**
- 1480 Photochemical Formation of Glycine and Methylamine from Glycolic Acid and Ammonia in the Presence of Particulate Cadmium Sulphide **Jun Onoe, Tomoji Kawai**
- 1481 A New Type of Atropisomeric Cobalt(III) Complex **Yoshiharu Nakano, Yuzo Yoshikawa, Jiro Hasegawa, Takeo Asano, Yasushi Igarashi, Shigeo Masuhara**
- 1483 Preparation of the Titanium Bisthionylimide Complex $[Cp_2Ti(NSO)_2]$ and the Silyl Sulphur Di-imide Derivative $[Cp_2Ti(NSNSiMe_3)_2]$: Precursors of Novel Metallacycles. Crystal Structure of the Thionylimide ($Cp = \eta^5-C_5H_5$) **Herbert Plenio, Herbert W. Roesky, Mathias Noltemeyer, George M. Sheldrick**
- 1484 C–H Rather than O–H Activation: Synthesis and Molecular Structure of a Cationic *cis*-Hydrido- σ -Acetylide Complex of Rhodium **Todd B. Marder, David Zargarian, Joseph C. Calabrese, Thomas H. Herskovitz, David Milstein**
- 1486 Preparation of Chemically Modified Electrodes by Attachment of Platinum Carbonyl Clusters, and their Efficient Electrocatalytic Action in Anodic Oxidation of Methanol **Ken-ichi Machida, Atsushi Fukuoka, Masaru Ichikawa, Michio Enyo**
- 1487 Sustained Catalytic Homogeneous Oxo-transfer Oxidation of Alkanes. Interaction of Alkyl Hydroperoxides with Transition Metal-substituted Polyoxometalates **Mahmoud Faraj, Craig L. Hill**
- 1489 Mechanistic Studies on the Isomerisation of Methyl-substituted 5-Oxabicyclo[2.1.0]pent-2-enes (Dewar Furans) to Acetylcyclopropenes **Ian G. Pitt, Richard A. Russell, Roger B. Waring, Ronald N. Warrener**
- 1491 A General and Useful Copper(II)-promoted Iodofunctionalization of Unsaturated Systems **José Barluenga, Miguel A. Rodríguez, Pedro J. Campos, Gregorio Asensio**
- 1492 The Late Stages of the Biosynthesis of the Diterpenoid Aphidicolin in *Cephalosporium aphidicola* **Mark J. Ackland, John F. Gordon, James R. Hanson, Boon Leng Yeoh, Arnold H. Ratcliffe**
- 1493 A New Method for Indole Functionalization. Nucleophilic Displacement Reactions of $[\eta^6-(4- \text{ or } 5\text{-Chloroindole})](\eta^5\text{-cyclopentadienyl})ruthenium(II)$ Hexafluorophosphates **Robert M. Moriarty, Yi-Yin Ku, U. S. Gill**
- 1495 Chiral Calixarene **Seiji Shinkai, Takashi Arimura, Hiroshi Satoh, Osamu Manabe**
- 1496 A New, Efficient Approach to α,β -Unsaturated Ketones and β -Hydroxy Ketones From 4,5-Dihydroisoxazoles **Stefan Kwiatkowski**
- 1498 Co-ordination of Benzynes at Tetra- and Penta-Ruthenium Centres: A Model for Dissociative Chemisorption of Benzene on a Stepped Metal (111) Surface **Selby A. R. Knox, Brian R. Lloyd, A. Guy Orpen, Josep M. Viñas, Martin Weber**
- 1500 Reduction of the Steric Hindrance to Conjugation in 3,4-Disubstituted Poly(thiophenes); Cyclopenta[c]thiophene and Thieno[c]thiophene as Precursors of Electrogenerated Conducting Polymers **Jean Roncali, Francis Garnier, Robert Garreau, Marc Lemaire**
- 1502 Lanthanide Tetraphenylimidodiphosphinates: X-Ray Structure of an Ethyl Acetate Adduct and Use as N.M.R. Shift Reagents for Acids **I. Rodriguez, C. Alvarez, J. Gomez-Lara, R. A. Toscano, N. Platzer, C. Mulheim, H. Rudler**
- 1504 A Manganese Cluster Bound to a Bilayer Membrane: a Chemical Model for the Oxygen-forming Centre of Photosynthesis **Natalia P. Luneva, Eugenia I. Knerelman, Vladimir Ya. Shafirovich, Alexander E. Shilov**
- 1505 Syntheses of Interlamellar Montmorillonitebipyridinepalladium(II) Catalysts: the First Examples of Chelation in Smectite Clay **B. M. Choudary, P. Bharathi**
- 1506 Asymmetric Oxidation by New Cyclic Flavins with Planar Chirality (Chiral Flavinophanes) **Seiji Shinkai, Toshiro Yamaguchi, Akito Kawase, Akiyo Kitamura, Osamu Manabe**
- 1508 Microbial Transformation of Dehydrocholic Acid into Steroid Dimers containing the Benzene Ring **Kan Nakao, Akimasa Iwadoh, Takashi Hirota, Shohei Hayakawa**
- 1509 An Efficient and Stereoselective Wittig–Horner Synthesis of Acyclic α -Enones with Barium Hydroxide as Solid Catalyst **Carlos Alvarez-Ibarra, Selma Arias, Gabriel Bañón, María J. Fernández, Miguel Rodríguez, Vicente Sinisterra**
- 1511 Asymmetric Synthesis of β -Lactams using a Pummerer Reaction **Takushi Kaneko, Yoshio Okamoto, Kiochi Hatada**

AUTHOR INDEX

- Ackland, Mark J., 1492
 Akai, Shuji, 1474
 Alvarez, C., 1502
 Alvarez-Ibarra, Carlos, 1509
 Anderson, J. R., 1435
 Araya, Abraham, 1455
 Arias, Selma, 1509
 Arimura, Takashi, 1495
 Asano, Takeo, 1481
 Asensio, Gregorio, 1491
 Aso, Yoshio, 1447
 Bañón, Gabriel, 1509
 Barf, Gert, 1457
 Barluenga, José, 1491
 Bartlett, N., 1431
 Bharathi, P., 1505
 Boudjouk, Philip, 1466
 Bruijn, Niels A., 1433
 Calabrese, Joseph C., 1484
 Campos, Pedro J., 1491
 Catalan, Cesar A. N., 1441
 Chien, James C. W., 1429
 Chilou, Valérie, 1469
 Chisholm, Malcolm H., 1423
 Choudary, B. M., 1505
 Cullis, Paul M., 1464
 Dakka, Jihad, 1421
 Date, Vandana, 1462
 Delpuech, Jean-Jacques, 1437
 Dewar, Michael J. S., 1451
 Djerassi, Carl, 1441
 Eaborn, Colin, 1461
 Enyo, Michio, 1486
 Faraj, Mahmoud, 1487
 Fernández, María J., 1509
 Fleming, Ian, 1472
 Fouquey, Claudine, 1424
 Fraser-Reid, Bert, 1462
 Fukumoto, Keiichiro, 1438, 1467
 Fukuoka, Atsushi, 1486
 Garnier, Francis, 1500
 Garreau, Robert, 1500
 Garst, John F., 1440
 Gill, U. S., 1493
 Goldbach, Michael, 1434
 Goldberg, Israel, 1426
 Gomez-Lara, J., 1502
 Gordon, John F., 1492
 Gouzerh, Pierre, 1469
 Hammond, Charles E., 1423
 Haneda, Toru, 1422
 Hanson, James R., 1492
 Harris, Frank, 1453
 Hasegawa, Jiro, 1481
 Hatada, Kiochi, 1511
 Hayakawa, Shohei, 1508
 Hayashi, Shinji, 1442
 Hellberg, Jonas, 1476
 Herskovitz, Thomas H., 1484
 Hill, Craig L., 1487
 Hirota, Takashi, 1508
 Hoashi, Koichiro, 1442
 Hosomi, Akira, 1442
 Hu, Nan X., 1447
 Huffman, John C., 1423
 Ichikawa, Masaru, 1486
 Igarashi, Yasushi, 1481
 Ihara, Masataka, 1438, 1467
 Ikeda, Masazumi, 1443
 Ishibashi, Hiroyuki, 1443
 Ishida, Yohhei, 1467
 Iwadoh, Akimasa, 1508
 Jäkel, Edgar, 1434
 Jeannin, Yves, 1469
 Jie, Caoxian, 1451
 Kametani, Tetsuji, 1438, 1467
 Kaneko, Chikara, 1422
 Kaneko, Takushi, 1511
 Kaptein, Bernard, 1457
 Katagiri, Nobuya, 1422
 Kawaguchi, M., 1431
 Kawai, Tomoji, 1480
 Kawase, Akito, 1506
 Kaye, Aston D., 1464
 Kellogg, Richard M., 1457
 Kirihaara, Masayuki, 1474
 Kita, Yasuyuki, 1474
 Kitamura, Akiyo, 1506
 Knerelman, Eugenia I., 1504
 Knox, Selby A. R., 1498
 Kodomari, Mitsuo, 1428
 Kohra, Shinya, 1442
 Korf, Stefan J., 1433
 Krische, Bernd, 1476
 Ku, Yi-Yin, 1493
 Kwiatkowski, Stefan, 1496
 Lam, Wilson L. K., 1460
 Lehn, Jean-Marie, 1424
 Lemaire, Marc, 1500
 Lerner, M., 1431
 Lickiss, Paul D., 1461
 Lie Ken Jie, Marcel S. F., 1460
 Lilja, Christina, 1476
 Lloyd, Brian R., 1498
 Lowe, Barrie M., 1455
 Luneva, Natalia P., 1504
 MacCorquodale, Finlay, 1456
 Machida, Ken-ichi, 1486
 Malthête, Jacques, 1424
 Manabe, Osamu, 1495, 1506
 Marder, Todd B., 1478, 1484
 Margot, Christian, 1441
 Maruyama, Kazumi, 1443
 Mason, Rod, 1453
 Masuhara, Shigeo, 1481
 Masui, Yoshiyuki, 1471
 Milstein, David, 1484
 Milton, Dafydd, 1453
 Minami, Kenjiro, 1443
 Mootoo, David R., 1462
 Moriarty, Robert M., 1493
 Mourni, El Mostafa, 1437
 Mulheim, C., 1502
 Murahashi, Shun-Ichi, 1471
 Najim, Sabah T., 1461
 Nakano, Yoshiharu, 1481
 Nakao, Kan, 1508
 Nakatani, Hiroshi, 1443
 Noltemeyer, Mathias, 1483
 O'Brien, Michael K., 1445
 Oda, Tetsuya, 1471
 Ogura, Fumio, 1447
 Okamoto, Yoshio, 1511
 Okunaka, Ryuichi, 1474
 Onoe, Jun, 1480
 Orpen, A. Guy, 1498
 Otsubo, Tetsuo, 1447
 Pearson, Anthony J., 1445
 Pitt, Ian G., 1489
 Platzer, N., 1502
 Plenio, Herbert, 1483
 Proudfoot, John R., 1441
 Ratcliffe, Arnold H., 1492
 Reddy, N. Laxma, 1472
 Regen, Steven L., 1428
 Robert, Francis, 1469
 Rodríguez, Miguel, 1509
 Rodríguez, Miguel A., 1491
 Rodriguez, I., 1502
 Roesky, Herbert W., 1483
 Roncali, Jean, 1500
 Roos, Jan A., 1433
 Ross, Julian R. H., 1433
 Rudler, H., 1502
 Russell, Richard A., 1489
 Saito, Shogo, 1448
 Sasho, Manabu, 1474
 Sasson, Yoel, 1421
 Satoh, Hiroshi, 1495
 Saxton, Helen M., 1449
 Schlenoff, Joseph B., 1429
 Schneider, Manfred P., 1434
 Seichter, Wilhelm, 1426
 Sekihachi, Jun-ichi, 1474
 Selve, Claude, 1437
 Shafirovich, Vladimir Ya., 1504
 Sheldrick, George M., 1483
 Shilov, Alexander E., 1504
 Shimizu, Noriko, 1467
 Shinkai, Seiji, 1495, 1506
 Sica, Donato, 1441
 Sinisterra, Vicente, 1509
 Sodano, Guido, 1441
 Stańczyk, Włodzimierz A., 1461
 Sudow, Izumi, 1467
 Sugahara, Toshiaki, 1471
 Sutherland, James K., 1449
 Takahashi, Takako, 1467
 Takaki, Ken, 1472
 Takenaka, H., 1431
 Tamura, Yasumitsu, 1474
 Taniguchi, Nobuaki, 1438
 Thompson, Dennis P., 1466
 Tokito, Shizuo, 1448
 Tominaga, Yoshinori, 1442
 Tomura, Michio, 1422
 Toscano, R. A., 1502
 Trippett, Stuart, 1464
 Tsai, P., 1435
 Tsutsui, Tetsuo, 1448
 van Ommen, Jan G., 1433
 Viñas, Josep M., 1498
 Walton, John C., 1456
 Wang-Griffin, Linda, 1457
 Ware, Anne C., 1472
 Waring, Roger B., 1489
 Warren, Ronald N., 1489
 Weber, Edwin, 1426
 Weber, Martin, 1498
 Whaley, Christopher, 1449
 Williams, Ian D., 1478
 Yamada, Shingetsu, 1448
 Yamaguchi, Toshiro, 1506
 Yeoh, Boon Leng, 1492
 Yoshikawa, Yuzo, 1481
 Zargarian, David, 1484

A NEW BOOK FOR *Biochemists.*

Topics in Lipid Research

From Structural Elucidation to Biological Function

Edited by R. A. Klein and B. Schmitz
Molteno Institute, University of Cambridge

Over the last decade many lipid chemists and biochemists have made a conscious effort to move from purely structural investigations to those which throw more light on the biological function of lipid molecules.

For many years lipids were considered to be molecules containing just C, H and O, related to fatty acids and hydrocarbons, with high oil-water partition coefficients; more recently, however, it has been realised that the more complex structures such as glycolipids and lipoproteins, and indeed glycolipoproteins, are fascinating both as structural challenges and as functional elements of the cell.

This book includes both reviews and research papers dealing with developments in the following areas: Platelet Activating Factor; Eicosanoids; Glycolipids; Probes and Anaesthetics; Membrane Structure and Function; Environmental Adaptation.

Hardcover 348pp ISBN 0 85186 3531
Price £37.50 (\$65.00)

Non-RSC member prices and US \$ price quoted. RSC members entitled to a discount on most publications. Details available from: The Royal Society of Chemistry, Membership Manager, 30 Russell Square, London WC1B 5DT.

ORDERING:

Orders should be sent to:
The Royal Society of Chemistry,
Distribution Centre,
Blackhorse Road,
Letchworth, Herts. SG6 1HN, UK


ROYAL
SOCIETY OF
CHEMISTRY
Information
Services

CLASSIFIED ADVERTISING

DISPLAY AND
SEMI-DISPLAY
£15.00 per single
col. cm.
column width
43mm (10 ems)

Send your
advertisements:—

**Classified
Advertisements,
Burlington
House
Piccadilly,
London
W1V 0BN.**

QUEEN MARY COLLEGE (University of London) UNIVERSITY OF BARCELONA ORGANIC CHEMISTS

Applications are invited from organic chemists for two postdoctoral positions (London and Barcelona) in a two year EEC Research Programme on ORGANIC CONDUCTORS starting in September/October 1987. Experience in organic synthesis (HETEROCYCLING COMPOUNDS) is necessary. Applications with brief curriculum and the names of two referees to Professor Raymond Bonnett, Chemistry Department, Queen Mary College, Mile End Road, London E1 4NS, UK or Dr. Joseph M. Ribo, Department of Organic Chemistry, Facultat de Quimica, Universitat de Barcelona, Marti i Franques 1, E-08028, Barcelona, Spain, from whom further information can be obtained.