

JOURNAL OF THE CHEMICAL SOCIETY

Chemical Communications

Number 18
1987

CONTENTS

- 1329 Alkylation and Condensation Reactions of *N,N*-Dibenzylglycine Esters: Synthesis of α -Amino Acid Derivatives **Brian D. Gray, Peter W. Jeffs**
- 1330 An EXAFS Study of the Structure of $\text{Fe}_3(\text{CO})_{12}$ in Solution **Norman Binsted, John Evans, G. Neville Greaves, Richard J. Price**
- 1333 Lewis Acid Assisted Annelation of Trimethylsilyl Enol Ethers of 1-Acetylcyclohexenes with α,β -Unsaturated Carbonyl Compounds to give Substituted 2-Decalones; Synthesis of (\pm)- ϵ -Cadinene **Hisahiro Hagiwara, Akihiro Okano, Tsutomu Akama, Hisashi Uda**
- 1335 The Effect of Pressure on Protease-Catalysed Peptide Formation **S. Kunugi, K. Tanabe, M. Fukuda, S. Makimoto, Y. Taniguchi**
- 1337 Evidence for Generation of the Unsaturated Sila-acetate Species $\text{Me}(\text{O}^-)\text{Si}=\text{O}$ by Dissociation of the Silanediolate Dianion *m*- $\text{ClC}_6\text{H}_4\text{CH}_2\text{SiMe}(\text{O}^-)_2$ **Jadwiga Chmielecka, Julian Chojnowski, Colin Eaborn, Włodimierz A. Stańczyk**
- 1338 Syntheses of 12-Oxygenated Forskolins **Nicholas J. Hrib**
- 1340 Highly Stereoselective Asymmetric Michael Addition Reactions Employing (*R*;*E*)-3,3,3-Trifluoroprop-1-enyl *p*-Tolyl Sulphoxide **Takashi Yamazaki, Nobuo Ishikawa, Hitoshi Iwatsubo, Tomoya Kitazume**
- 1342 Total Synthesis of the Sesterterpenoid (\pm)-Palauolide **Edward Piers, John S. M. Wai**
- 1344 Conformational Analysis of $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{CH}_2\text{OMe}]$: Solvent Dependence of Conformer Populations **Brent K. Blackburn, Stephen G. Davies, Mark Whittaker**
- 1345 Construction of Contiguous Quarternary and Tertiary Carbon Centres *via* the Asymmetric Michael Reaction **Kiyoshi Tomioka, Kōsuke Yasuda, Kenji Koga**
- 1347 Transient Photochemistry of $(\eta^5\text{-Cyclopentadienyl})\text{bis}(\text{ethene})\text{rhodium}$ **Simon T. Belt, David M. Haddleton, Robin N. Perutz, Brian P. H. Smith, Andrew J. Dixon**
- 1350 A Dimeric Macrocyclic Rhodium(I) Complex with a Weak Metal–Metal Bond **George Ferguson, Karen E. Matthes, David Parker**
- 1351 A Total Synthesis of (+)-Perrottetianal A **Hisahiro Hagiwara, Hisashi Uda**
- 1353 The Selective Introduction of Organometallic Markers into Oestrogens. C-16 Prop-2-ynylation of Oestrone **Michel Gruselle, Simon Greenfield, Gérard Jaouen**
- 1355 Dehydrocyclization of Hexane to Benzene over Zirconia-supported Chromia **Makoto Hino, Kazushi Arata**
- 1356 Preparation and Intramolecular Metal-exchange Reaction of Cationic Trinuclear $\mu_3\text{-}\eta^3\text{-(C,C,O)}$ -Ketene Complexes **Munetaka Akita, Takashi Kawahara, Yoshihiko Moro-oka**
- 1358 Photo-CIDNP Studies on Calixarenes and Bridged Calixarenes **Volker Böhmer, Helmut Goldmann, Robert Kaptein, Lucia Zetta**
- 1360 Novel Synthesis of a Key Intermediate for (\pm)-Atisine **Kozo Shishido, Kou Hiroya, Keiichiro Fukumoto, Tetsuji Kametani**
- 1362 Oxidation of *N*-Aminoquinazolones in the Presence of Alkenes: Evidence Against Involvement of *N*-Nitrenes **Robert S. Atkinson, Brian J. Kelly**
- 1363 Specific Adsorption of Bitter Substances on Lipid Bilayer-coated Piezoelectric Crystals **Yoshio Okahata, Hiroshi Ebato, Kazuhiro Taguchi**
- 1365 Electric Responses of Bilayer-immobilized Films as Models of a Chemoreceptive Membrane **Yoshio Okahata, Gen-ichiro En-na**
- 1367 An Easy Route to Dibenz[*c,e*]azepines *via* Nitrile Ylide Cyclisation: the Electrocyclic Equivalent of a Bischler–Napieralski Reaction **Paul W. Groundwater, Claire Struthers-Semple, John T. Sharp**
- 1368 Asymmetric Reduction of 3-Oxo-octadecanoic Acid with Fermenting Baker's Yeast. An Easy Synthesis of Optically Pure (+)-(2*R*,3*R*)-Corynomycolic Acid **Masanori Utaka, Hiroshi Higashi, Akira Takeda**
- 1369 Methanol Conversion to Hydrocarbons over the Zeolite Catalyst H-ZSM-5 in the Presence of Oxygen and Nitric Oxide: Further Evidence Against a Radical Reaction Mechanism **Roger Hunter, Graham J. Hutchings, Wolfgang Pickl**
- 1371 Mechanism of the Enzymic Elimination of Ammonia from 3-Substituted Aspartic Acids by 3-Methylaspartase **Nigel P. Botting, Mahmoud Akhtar, Mark A. Cohen, David Gani**
- 1373 Displacement of an Aromatic Nitro Group using Phenoxides **P. G. Sammes, D. Thetford, M. Voyle**

- 1375 Cycloaddition Reaction of Cycloheptatrienethione with Cyclopentadiene **Takahisa Machiguchi, Toshio Hasegawa, Hiroyuki Otani, Yukiko Ishii**
- 1376 A *cis*-Dioxoruthenium(vi) Complex as Active Oxidant of Chloride and Organic Substrates; Preparation, Characterization, and Reactivity of *cis*-[Ru^{VI}(6,6'-Cl₂bpy)₂O₂]²⁺ (6,6'-Cl₂bpy = 6,6'-dichloro-2,2'-bipyridine) **Chi-Ming Che, Wai-Ho Leung**
- 1378 Stereoselective Synthesis of Co-ordinated Phosphines: Stereospecific Generation and Alkylation of the Tertiary Phosphido-Metal Group in (*R**,*R**)-[(η⁵-C₅H₅){1,2-C₆H₄(PMePh)₂}FePMePh] at -90 °C **Geoffrey Salem, S. Bruce Wild**
- 1379 Direct Conversion of Saturated Hydrocarbons into Phenylseleno Derivatives **Derek H. R. Barton, Jean Boivin, Pascale Le Coupanec**
- 1381 Formation of a Two-centre, Three-electron, Sulphur-Sulphur Bond in the Gas phase **Thomas Drewello, Carlito B. Lebrilla, Helmut Schwarz, Leo J. de Koning, Roel H. Fokkens, Nico M. M. Nibbering, Elke Anklam, Klaus-Dieter Asmus**
- 1383 A Very Short Degradation of the Bile Acid Side Chain **Derek H. R. Barton, Jocelyne Wozniak, Samir Z. Zard**
- 1385 The First Hexacarboxylato Diruthenium(III) Complex. Synthesis, X-Ray Crystal Structure, and Properties of Tetra-μ-acetato-diacetatodiruthenium(III) Monohydrate **Michael G. B. Drew, Paula Higgins, G. Malachy McCann**
- 1387 Reduction of Azo-group-containing Peptides in Fast Atom Bombardment Mass Spectrometry **Klaus P. Wirth, Elmar Junker, Franz W. Röllgen, Petra Fonrobert, Michael Przybylski**
- 1388 The Role of Surface O⁻ in the Selective Oxidation of Methane **Graham J. Hutchings, Michael S. Scurrall, Jeremy R. Woodhouse**
- 1390 Transposition of the Cyano Group on a Benzene Ring in a Gaseous Plasma **Tatsuhiko Yajima, Atsuhiko Tsuchiya, Meguru Tezuka**
- 1391 1,5,9-Trioxacyclododecane and 3,3,7,7,11,11-Hexamethyl-1,5,9-trioxacyclododecane: Novel Lithium Cation Complexing Agents **Johannes Dale, Jan Eggestad, Siv B. Fredriksen, Per Groth**
- 1393 Evidence of Carbene Formation in Oxidative Coupling of Methane over Lithium-promoted Magnesium Oxide **Guy-A. Martin, C. Mirodatos**
- 1395 Preparation and Characterization of the Metallaphosphaborane 2-Ph-1,3,6,7,2-[(η⁵-C₅H₅)Co]₄PB₂H₂ **Jiang Feilong, Thomas P. Fehlner, Arnold L. Rheingold**
- 1396 Oxo(phosphine)ruthenium(IV) Redox Chemistry: Substrate Oxidation Selectivity Based on Substrate Hydrophobicity **Mary E. Marmion, Kenneth J. Takeuchi**
- 1397 Preparative Flash Vacuum Thermolysis. Homolytic Cleavage of Isomannide and Isosorbide Dinitrate to 1,4,3,6-Dianhydrohexoses **Jan G. Batelaan, Anton J. M. Weber, Ulfert E. Wiersum**
- 1399 Vinylphosphane—How Effective is π-Donation from Phosphorus Lone Pairs? **Christian Schade, Paul von Ragué Schleyer**
- 1401 Absence of High Methanation Activity of Titania-supported Rhodium, Ruthenium, and Iridium Catalysts in their Strong Metal-Support Interaction State **Toshiaki Mori, Shigeyoshi Taniguchi, Yoshihiko Mori, Tadashi Hattori, Yuichi Murakami**
- 1403 The Leapfrog Principle: A Rule for Electron Counts of Carbon Clusters **P. W. Fowler, J. I. Steer**
- 1405 Transition Metal Porphyrins as Catalysts in the Oxidation of Nitroso Compounds **Karl Anker Jørgensen**
- 1406 A Synthetic Approach to Benzo[1,2-*b*:4,3-*b'*]dipyrroles from Isoquinolines **Premji Meghani, Jonathan D. Street, John A. Joule**
- 1408 The Internal Energy Distribution in Fast Atom Bombardment/Liquid Secondary Ion Mass Spectra **Dudley H. Williams, Stephen Naylor**
- 1409 Reverse Halogenation Using Supported Copper(I) Iodide **James H. Clark, Craig W. Jones**
- 1410 Stereoselective α-Alkylation of α,β-Unsaturated Esters Utilizing Conjugate Addition of Nitrogen Nucleophiles (R₂NLi) **Tadao Uyehara, Naoki Asao, Yoshinori Yamamoto**
- 1412 Carbon Dioxide Induced Metathesis of C≡N and C≡O Triple Bonds of Methyl Isocyanide and Carbon Monoxide **Dru L. DeLaet, Phillip E. Fanwick, Clifford P. Kubiak**
- 1413 Formation of a Chiral β-Lactam by Photocyclisation of Achiral Oxo Amide in its Chiral Crystalline State **Fumio Toda, Minoru Yagi, Shin-ichi Sōda**
- 1414 Large Isotope Effects on the ¹¹⁹Sn N.M.R. Parameters of the Stannyl Ion **Roderick E. Wasylshen, Neil Burford**
- 1416 Stereochemical Evidence for Monomeric Thiometaphosphate as an Intermediate in the Hydrolysis of (R_p) and (S_p)-Deoxyadenosine 5'-[β-¹⁷O]-β-thiodiphosphate **Sara P. Harnett, Gordon Lowe**
- 1418 The Photocatalysed Reduction of Aqueous Sodium Carbonate to Carbon using Platinised Titania **Magdy W. Rophael, Mounir A. Malati**
-
- Corrigendum**
- 1420 Triphenylmethane Dye Ethnologues with Absorption Bands in the Near I.R. **Shuzo Akiyama, Shin'ichi Nakatsuji, Kenichiro Nakashima, Mituaki Watanabe**

AUTHOR INDEX

- Akama, Tsutomu, 1333
 Akhtar, Mahmoud, 1371
 Akita, Munetaka, 1356
 Akiyama, Shuzo, 1420
 Anklam, Elke, 1381
 Arata, Kazushi, 1355
 Asao, Naoki, 1410
 Asmus, Klaus-Dieter, 1381
 Atkinson, Robert S., 1362
 Barton, Derek H. R., 1379, 1383
 Batelaan, Jan G., 1397
 Belt, Simon T., 1347
 Binsted, Norman, 1330
 Blackburn, Brent K., 1344
 Böhmer, Volker, 1358
 Boivin, Jean, 1379
 Botting, Nigel P., 1371
 Burford, Neil, 1414
 Che, Chi-Ming, 1376
 Chmielecka, Jadwiga, 1337
 Chojnowski, Julian, 1337
 Clark, James H., 1409
 Cohen, Mark A., 1371
 Dale, Johannes, 1391
 Davies, Stephen G., 1344
 de Koning, Leo J., 1381
 DeLaet, Dru L., 1412
 Dixon, Andrew J., 1347
 Drew, Michael G. B., 1385
 Drewello, Thomas, 1381
 Eaborn, Colin, 1337
 Ebato, Hiroshi, 1363
 Eggestad, Jan, 1391
 En-na, Gen-ichiro, 1365
 Evans, John, 1330
 Fanwick, Philip E., 1412
 Fehlner, Thomas P., 1395
 Feilong, Jiang, 1395
 Ferguson, George, 1350
 Fokkens, Roel H., 1381
 Fonrobert, Petra, 1387
 Fowler, P. W., 1403
 Fredriksen, Siw B., 1391
 Fukuda, M., 1335
 Fukumoto, Keiichiro, 1360
 Gani, David, 1371
 Goldmann, Helmut, 1358
 Gray, Brian D., 1329
 Greaves, G. Neville, 1330
 Greenfield, Simon, 1353
 Groth, Per, 1391
 Groundwater, Paul W., 1367
 Gruselle, Michel, 1353
 Haddleton, David M., 1347
 Hagiwara, Hisahiro, 1333, 1351
 Harnett, Sara P., 1416
 Hasegawa, Toshio, 1375
 Hattori, Tadashi, 1401
 Higashi, Hiroshi, 1368
 Higgins, Paula, 1385
 Hino, Makoto, 1355
 Hiroya, Kou, 1360
 Hrib, Nicholas J., 1338
 Hunter, Roger, 1369
 Hutchings, Graham J., 1369, 1388
 Ishii, Yukiko, 1375
 Ishikawa, Nobuo, 1340
 Iwatsubo, Hitoshi, 1340
 Jaouen, Gérard, 1353
 Jeffs, Peter W., 1329
 Jones, Craig W., 1409
 Joule, John A., 1406
 Jørgensen, Karl Anker, 1405
 Junker, Elmar, 1387
 Kametani, Tetsuji, 1360
 Kaptein, Robert, 1358
 Kawahara, Takashi, 1356
 Kelly, Brian J., 1362
 Kitazume, Tomoya, 1340
 Koga, Kenji, 1345
 Kubiak, Clifford P., 1412
 Kunugi, S., 1335
 Le Coupanec, Pascale, 1379
 Lebrilla, Carlito B., 1381
 Leung, Wai-Ho, 1376
 Lowe, Gordon, 1416
 McCann, G. Malachy, 1385
 Machiguchi, Takahisa, 1375
 Makimoto, S., 1335
 Malati, Mounir A., 1418
 Marmion, Mary E., 1396
 Martin, Guy-A., 1393
 Matthes, Karen E., 1350
 Meghani, Premji, 1406
 Mirodatos, C., 1393
 Mori, Toshiaki, 1401
 Mori, Yoshihiko, 1401
 Moro-oka, Yoshihiko, 1356
 Murakami, Yuichi, 1401
 Nakashima, Kenichiro, 1420
 Nakatsuji, Shin'ichi, 1420
 Naylor, Stephen, 1408
 Nibbering, Nico M. M., 1381
 Okahata, Yoshio, 1363, 1365
 Okano, Akihiro, 1333
 Otani, Hiroyuki, 1375
 Parker, David, 1350
 Perutz, Robin N., 1347
 Pickl, Wolfgang, 1369
 Piers, Edward, 1342
 Price, Richard J., 1330
 Przybylski, Michael, 1387
 Rheingold, Arnold L., 1395
 Röllgen, Franz W., 1387
 Rophael, Magdy W., 1418
 Salem, Geoffrey, 1378
 Sammes, P. G., 1373
 Schade, Christian, 1399
 Schleyer, Paul von Ragué, 1399
 Schwarz, Helmut, 1381
 Scurrall, Michael S., 1388
 Sharp, John T., 1367
 Shishido, Kozo, 1360
 Smith, Brian P. H., 1347
 Sōda, Shin-ichi, 1413
 Stańczyk, Włodimierz A., 1337
 Steer, J. I., 1403
 Street, Jonathan D., 1406
 Struthers-Semple, Claire, 1367
 Taguchi, Kazuhiro, 1363
 Takeda, Akira, 1368
 Takeuchi, Kenneth J., 1396
 Tanabe, K., 1335
 Taniguchi, Shigeyoshi, 1401
 Taniguchi, Y., 1335
 Tezuka, Meguru, 1390
 Thetford, D., 1373
 Toda, Fumio, 1413
 Tomioka, Kiyoshi, 1345
 Tsuchiya, Atsuhiko, 1390
 Uda, Hisashi, 1333, 1351
 Utaka, Masanori, 1368
 Uyehara, Tadao, 1410
 Voyle, M., 1373
 Wai, John S. M., 1342
 Wasylshen, Roderick E., 1414
 Watanabe, Mituaki, 1420
 Weber, Anton J. M., 1397
 Whittaker, Mark, 1344
 Wiersum, Ulfert E., 1397
 Wild, S. Bruce, 1378
 Williams, Dudley H., 1408
 Wirth, Klaus P., 1387
 Woodhouse, Jeremy R., 1388
 Wozniak, Jocelyne, 1383
 Yagi, Minoru, 1413
 Yajima, Tatsuhiko, 1390
 Yamamoto, Yoshinori, 1410
 Yamazaki, Takashi, 1340
 Yasuda, Kōsuke, 1345
 Zard, Samir Z., 1383
 Zetta, Lucia, 1358

NEW BOOKS

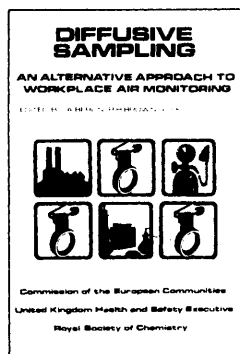
FROM THE ROYAL SOCIETY OF CHEMISTRY

Hardcover 500pp
ISBN 0 85186 343 3

DIFFUSIVE SAMPLING

AN ALTERNATIVE APPROACH TO WORKPLACE AIR MONITORING

Edited by: A. Berlin, Health & Safety Directorate
R.H. Brown, Occupational Medicine and Hygiene Laboratories
K.J. Saunders, BP Research Centre.



Price £45.00 \$87.00
RSC Members Price £27.00

Diffusive Sampling is based on a symposium held in Luxembourg in September 1986 and organised jointly by the Commission of the European Communities and the United Kingdom Health and Safety Executive in cooperation with the World Health Organization and the Royal Society of Chemistry. This book:

- Reviews the state of the art of diffusive sampler techniques
- Stimulates the exchange of technical information
- Assesses the suitability and range of applications for workplace monitoring
- Promotes the further development of this technique and its wider use.

Brief contents: Introduction, Current Field Application, Role of Diffusive Sampler in Workplace Air Monitoring, Current Trends in Development of Diffusive Systems, Acceptability of Monitoring Data Based on Diffusive Sampling, Conclusions and Recommendations.

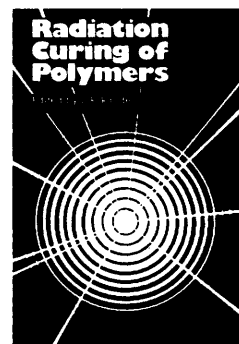
Radiation Curing of Polymers

EDITED BY D. R. RANDELL, CIBA-GEIGY INDUSTRIAL CHEMICALS

Throughout the 1970's and 1980's, there has been a growing interest in the use of radiation sources in the curing of polymers in surface coatings applications. This has arisen because the procedure presents a quick, clean and energy efficient means of achieving a hardened cross-linked polymer system. Initially ultraviolet was the sole radiation source used but more recently electron beam and laser energy sources have been introduced. Furthermore cationic as well as free radical initiators are now finding favour.

Industrial outlets now served by the technique include paper, metal, plastics and wood coatings, adhesives and printing. Consequently many workers in industry and academia are now involved in the varied aspects of developing new systems for the future.

This new book provides a timely review of progress in this rapidly developing and diverse subject area and offers useful and stimulating reading for practitioners of the radiation curing of polymers.



Softcover 216pp
ISBN 0 85186 096 4

Price £32.50 (\$63.00)
RSC Members Price £20.00

ORDERING:

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



ROYAL
SOCIETY OF
CHEMISTRY
Information
Services