

JOURNAL OF THE CHEMICAL SOCIETY

Chemical Communications

Number 14

1987

CONTENTS

- 1049 The First Heptaruthenium Cluster: X-Ray Crystal Structure of $\text{Ru}_7(\text{CO})_{18}(\mu_4\text{-PPh})_2$, a Molecule Consisting of Fused Square Pyramidal Polyhedra **Françoise Van Gestel, Nicholas J. Taylor, Arthur J. Carty**
- 1050 Boron Trifluoride-promoted Reaction of 4'-Nitrobenzenesulphenanilide and Its *N*-Methyl Derivative with Alkynes **Luisa Benati, P. Carlo Montecvecchi, Piero Spagnolo**
- 1052 Solvent Dependence of the Activation Enthalpies of Homolytic Dissociation of Metal–Carbon Bonds **Maureen K. Geno, Jack Halpern**
- 1053 Secondary Mannich Bases *via* Trimethylsilyl Trifluoromethanesulphonate Promoted Addition of Silyl Enol Ethers to Schiff Bases **R. A. Pilli, D. Russowsky**
- 1054 A Comparison of the Receptor Stereochemistry in $[\text{Pt}(\text{bipy})(\text{NH}_3)_2\text{-Dinaphtho-30-crown-10}][\text{PF}_6]_2$ and $[\text{Diquat}\cdot\text{Dinaphtho-30-crown-10}][\text{PF}_6]_2$ (bipy = 2,2'-bipyridine) **Billy L. Allwood, Howard M. Colquhoun, Simon M. Doughty, Franz H. Kohnke, Alexandra M. Z. Slawin, J. Fraser Stoddart, David J. Williams, Ryszard Zarzycki**
- 1058 Complexation of Paraquat and Diquat by a Bismetaphenylene-32-crown-10 Derivative **Billy L. Allwood, Hooshang Shahriari-Zavareh, J. Fraser Stoddart, David J. Williams**
- 1061 Complexation of Diquat by a Bisparaphenylene-34-crown-10 Derivative **Billy L. Allwood, Neil Spencer, Hooshang Shahriari-Zavareh, J. Fraser Stoddart, David J. Williams**
- 1064 Complexation of Paraquat by a Bisparaphenylene-34-crown-10 Derivative **Billy L. Allwood, Neil Spencer, Hooshang Shahriari-Zavareh, J. Fraser Stoddart, David J. Williams**
- 1066 Complex Formation between Bisparaphenylene-(3*n* + 4)-crown-*n* Ethers and the Paraquat and Diquat Dications **Peter R. Ashton, Alexandra M. Z. Slawin, Neil Spencer, J. Fraser Stoddart, David J. Williams**
- 1070 The Dependence of the Solid State Structures of Bisparaphenylene-(3*n*+4)-crown-*n* Ethers upon Macrocyclic Ring Size **Alexandra M. Z. Slawin, Neil Spencer, J. Fraser Stoddart, David J. Williams**
- 1072 Formation of 2,5-Dihydroselenophenes and 1,3-Dienes from Diketo Selenides by Reduction with Low-valent Titanium Reagents **Juzo Nakayama, Yoji Ikuina, Fumito Murai, Masamatsu Hoshino**
- 1073 Regioselective One Pot Approach to Aminodeoxy Sugars *via* Aminosilanes **Abdul Malik, Najam-ul-Husain Kazmi, Abdul Qasim Khan, Zaheer Ahmad**
- 1075 Electroactive Films of Nickel(II)–Cyclam (1,4,8,11-tetra-azacyclotetradecane) Covalently Attached to Polypyrrole **Jean-Paul Collin, Jean-Pierre Sauvage**
- 1076 Synthesis and X-Ray Crystal Structure of $[\text{Cu}(\text{SC}_6\text{H}_2\text{Pr}_3)]_8$ **Qingchuan Yang, Kaluo Tang, Hua Liao, Yuzhen Han, Zhongguo Chen, Youqi Tang**
- 1077 Reaction of Diazoalkanes on the Activated C(4)–C(5) Isoxazole Double Bond: a New Entry to the 2-Oxa-3-azabicyclo-[3.1.0]hex-3-ene Ring System **Rodolfo Nesi, Donatella Giomi, Laura Quartara, Susanna Bracci, Sandro Papaleo**
- 1078 Photocatalytic Nitrogen Reduction using Visible Light **K. Tennakone, S. Wickramanayake, C. A. N. Fernando, O. A. Ileperuma, S. Punchihewa**
- 1080 Enantioselective Hydrolysis of Racemic Diesters by Porcine Pancreatic Lipase **Eryka Guibé-Jampel, Gérard Rousseau, Jacques Salaün**
- 1082 The Reaction of Tetrachlorocyclopropene with Trimethylsilyloxydienes: A 'One-pot' Diels–Alder Route to Trichlorotropenes and -tropolones **Martin G. Banwell, John H. Knight**
- 1083 Short Convergent Route to Homochiral Carbocyclic 2'-Deoxynucleosides and Carbocyclic Ribonucleosides **Keith Biggadike, Alan D. Borthwick, Anne M. Exall, Barrie E. Kirk, Stanley M. Roberts, Peter Youds**
- 1085 The Transformation of Tryptophan to Aspartic Acid in Peptides **Subramania Ranganathan, Darshan Ranganathan, Dipti Bhattacharyya**
- 1086 1,4,8,11,15,18,22,25-Octa-alkyl Phthalocyanines: New Discotic Liquid Crystal Materials **Michael J. Cook, Mervyn F. Daniel, Kenneth J. Harrison, Neil B. McKeown, Andrew J. Thomson**
- 1088 On the Mechanism of Peracid Oxidation of α -Diketones to Acid Anhydrides: An ^{17}O and ^{18}O Isotope Study **Paul M. Cullis, John R. P. Arnold, Michael Clarke, Rachel Howell, Miguel DeMira, Matthew Naylor, Dave Nicholls**
- 1090 Substituted 1,3,3a,4,5,6a-Hexahydro-oxazolo[4,5-*d*]-1,2,3-triazoles from a Cycloaddition on a Carbonyl Group. Thermal Ring Expansion: A New Route to Substituted 1,3,4,5-Oxatriazenes **Richard N. Butler, Ann M. Evans, Patrick McArdle, D. Cunningham**
- 1091 Convenient Synthesis of 4-Nitrotetralones by Selective Side-chain Nitration of Methyl-substituted Acryloylbenzenes, followed by Intramolecular Michael Reaction **Takashi Keumi, Toshihiko Inagaki, Norihiro Nakayama, Toshio Morita, Hidehiko Kitajima**

- 1092 Synthesis of a Metal-free Three-co-ordinate Phosphorus(v) Hydride and its Conversion into a Phospha-alkene *via* Reductive Hydride Shift **Andrew R. Barron, Alan H. Cowley**
- 1093 Synthesis of the First Organopalladium(IV) Cations, including the First X-Ray Study of Isostructural Organopalladium(IV) and Platinum(IV) Complexes, [*fac*-MMe₃{tris(pyrazol-1-yl)methane-*N,N',N''*}]I **Peter K. Byers, Allan J. Canty, Brian W. Skelton, Allan H. White**
- 1095 Trapping of Dopant Anions in Two-layer Polypyrrole Films **Jördis Tietje-Girault, Julie M. Anderson, Iain MacInnes, Martin Schröder, George Tennant, Hubert H. Girault**
- 1097 Hydroformylation of Formaldehyde to give Glycolaldehyde with Halide-promoted Rh₄(CO)₁₂ **Mario Marchionna, Giuliano Longoni**
- 1099 Biosynthesis of Multicolored Acid, a Polyketide Metabolite from *Penicillium multicolor*: Occurrence of Large ¹⁸O-Induced β-Isotope Shifts in ¹³C N.M.R. Spectra **John S. E. Holker, Miyuki Kaneda, Shawn E. Ramer, John C. Vederas**
- 1100 Halide Abstraction by Antimony(V): a Convenient Route to Antimonate(V) Salts involving Cationic Transition Metal Species. Crystal and Molecular Structure of *fac*-[TiCl₃(MeCN)₃][SbCl₆] **Preet P. K. Claire, Gerald R. Willey, Michael G. B. Drew**
- 1102 Stereoselective Synthesis of the Dihydrobenzo[*b*]furan Segments of the Ephedradine Alkaloids **Raymond Baker, Nigel G. Cooke, Guy R. Humphrey, Stanley H. B. Wright, Jordan Hirshfield**
- 1105 Aquation of Neutral Ligands from Penta-ammine-cobalt(III) and -chromium(III) Ions: Mechanistic Differentiation **Geoffrey A. Lawrence, Rudi van Eldik**
- 1106 A General Preparative Route to Compounds containing 10-Vertex *arachno*- and *nido*-Tricarborane Cages **Bohumil Štibr, Tomáš Jelinek, Zbyněk Janoušek, Stanislav Heřmánek, Eva Drdáková, Zbyněk Plzák, Jaromír Plešek**
- 1108 A Novel Rearrangement in a 1,3-Bis(homocyclyl) Ring System **Alan P. Marchand, Pei-wen Jin, Judith L. Flippen-Anderson, Richard Gilardi, Clifford George**
- 1110 Five-Co-ordinate Aryl- and Alkyl-Ruthenium(III) Porphyrin Complexes, and Ruthenium-Carbon Bond Strengths **Mingzhe Ke, Steven J. Rettig, Brian R. James, David Dolphin**
- 1112 Trimeric Pentamethylcyclopentadienylvanadium Dioxide, [(η-C₅Me₅)V(O)(μ-O)]₃ **Frank Bottomley, Lori Sutin**
- 1113 Facile Preparation of High Molecular Weight, Highly Conductive Poly(2,5-furylene vinylene) **Kwan-Yue Jen, T. R. Jow, Ronald L. Elsenbaumer**
- 1115 CIDNP Evidence for a 'Hot' Carbocation formed by Electron Transfer between Two Radicals **Sueg-Geun Lee**
- 1117 Formation of ZnS and CdS by Thermolysis of Homoleptic Thiolato Compounds [M(SMe)₂]_n (M = Zn, Cd) **Kohtaro Osakada, Takakazu Yamamoto**
- 1118 Nitrogen Inversion in the Solid State: Characterization of a Conformational Process in Crystalline 1,3,5-Tribenzyl-1,3,5-triazacyclohexane by X-Ray Analysis at Several Temperatures **George A. Sim**
- 1121 The Vapour Pressure of Enantiomers and of their Mixtures **Mario Farina**
- 1122 Redox-active Crown Ethers: Transmission of Cation Binding to a Redox Centre *via* a Conjugated Link **Martyn P. Andrews, Christopher Blackburn, Jerome F. McAleer, Vikram D. Patel**
- 1124 A New Series of Quinquedentate Macrocycles Exhibiting Systematic Donor-Atom Variation: Equilibrium and X-Ray Structural Data for their Interaction with Copper(II) **Kenneth R. Adam, Darren Baldwin, Paul A. Duckworth, Anthony J. Leong, Leonard F. Lindoy, Mary McPartlin, Peter A. Tasker**
- 1126 Isolation and X-Ray Structure of [(μ-H)Ru₃(CO)₉(μ₃-PhNCPh)], the Catalytically Active Cluster in Ru₃(CO)₁₂-catalysed Transfer Hydrogenation of Benzylideneaniline **Amithaba Basu, Sumit Bhaduri, Krishna Sharma, Peter G. Jones**
- 1127 Amphidinolide-B, a Novel Macrolide with Potent Antineoplastic Activity from the Marine Dinoflagellate *Amphidinium* sp. **Masami Ishibashi, Yasushi Ohizumi, Mari Hamashima, Hideshi Nakamura, Yoshimasa Hirata, Takuma Sasaki, Jun'ichi Kobayashi**
- 1129 Structurally reinforced Macrocyclic Ligands that show greatly enhanced Selectivity for Metal Ions on the Basis of the Match in Size between the Metal Ion and the Macrocyclic Cavity **Robert D. Hancock, Ann Evers, M. Patrick Ngwenya, Peter W. Wade**
- 1131 Synthesis and X-Ray Crystallographic Characterization of a Stable Dioxadiphosphetane **John Powell, Kai S. Ng, Jeffery F. Sawyer**

AUTHOR INDEX

- Adam, Kenneth R., 1124
 Ahmad, Zaheer, 1073
 Allwood, Billy L., 1054, 1058, 1061, 1064
 Anderson, Julie M., 1095
 Andrews, Martyn P., 1122
 Arnold, John R. P., 1088
 Ashton, Peter R., 1066
 Baker, Raymond, 1102
 Baldwin, Darren, 1124
 Banwell, Martin G., 1082
 Barron, Andrew R., 1092
 Basu, Amithaba, 1126
 Benati, Luisa, 1050
 Bhaduri, Sumit, 1126
 Bhattacharyya, Dipti, 1085
 Biggadike, Keith, 1083
 Blackburn, Christopher, 1122
 Borthwick, Alan D., 1083
 Bottomley, Frank, 1112
 Bracci, Susanna, 1077
 Butler, Richard N., 1090
 Byers, Peter K., 1093
 Canty, Allan J., 1093
 Carty, Arthur J., 1049
 Chen, Zhongguo, 1076
 Claire, Preet P. K., 1100
 Clarke, Michael, 1088
 Collin, Jean-Paul, 1075
 Colquhoun, Howard M., 1054
 Cook, Michael J., 1086
 Cooke, Nigel G., 1102
 Cowley, Alan H., 1092
 Cullis, Paul M., 1088
 Cunningham, D., 1090
 Daniel, Mervyn F., 1086
 DeMira, Miguel, 1088
 Dolphin, David, 1110
 Doughty, Simon M., 1054
 Drdaková, Eva, 1106
 Drew, Michael G. B., 1100
 Duckworth, Paul A., 1124
 Elsenbaumer, Ronald L., 1113
 Evans, Ann M., 1090
 Evers, Ann, 1129
 Exall, Anne M., 1083
 Farina, Mario, 1121
 Fernando, C. A. N., 1078
 Flippen-Anderson, Judith L., 1108
 Geno, Maureen K., 1052
 George, Clifford, 1108
 Gilardi, Richard, 1108
 Giomi, Donatella, 1077
 Girault, Hubert H., 1095
 Guibé-Jampel, Eryka, 1080
 Halpern, Jack, 1052
 Hamashima, Mari, 1127
 Han, Yuzhen, 1076
 Hancock, Robert D., 1129
 Harrison, Kenneth J., 1086
 Hefmánek, Stanislav, 1106
 Hirata, Yoshimasa, 1127
 Hirshfield, Jordan, 1102
 Holker, John S. E., 1099
 Hoshino, Masamatsu, 1072
 Howell, Rachel, 1088
 Humphrey, Guy R., 1102
 Ikuina, Yoji, 1072
 Ieperuma, O. A., 1078
 Inagaki, Toshihiko, 1091
 Ishibashi, Masami, 1127
 James, Brian R., 1110
 Janoušek, Zbyněk, 1106
 Jelinek, Tomáš, 1106
 Jen, Kwan-Yue, 1113
 Jin, Pei-wen, 1108
 Jones, Peter G., 1126
 Jow, T. R., 1113
 Kaneda, Miyuki, 1099
 Kazmi, Najam-ul-Husain, 1073
 Ke, Mingzhe, 1110
 Keumi, Takashi, 1091
 Khan, Abdul Qasim, 1073
 Kirk, Barrie E., 1083
 Kitajima, Hidehiko, 1091
 Knight, John H., 1082
 Kobayashi, Jun'ichi, 1127
 Kohnke, Franz H., 1054
 Lawrance, Geoffrey A., 1105
 Lee, Sueg-Geun, 1115
 Leong, Anthony J., 1124
 Liao, Hua, 1076
 Lindoy, Leonard F., 1124
 Longoni, Giuliano, 1097
 McAleer, Jerome F., 1122
 McArdle, Patrick, 1090
 MacInnes, Iain, 1095
 McKeown, Neil B., 1086
 McPartlin, Mary, 1124
 Malik, Abdul, 1073
 Marchand, Alan P., 1108
 Marchionna, Mario, 1097
 Montevecchi, P. Carlo, 1050
 Morita, Toshio, 1091
 Murai, Fumito, 1072
 Nakamura, Hideshi, 1127
 Nakayama, Juzo, 1072
 Nakayama, Norihiro, 1091
 Naylor, Matthew, 1088
 Nesi, Rodolfo, 1077
 Ng, Kai S., 1131
 Ngwenya, M. Patrick, 1129
 Nicholls, Dave, 1088
 Ohizumi, Yasushi, 1127
 Osakada, Kohtaro, 1117
 Papaleo, Sandro, 1077
 Patel, Vikram D., 1122
 Pilli, R. A., 1053
 Plešek, Jaromir, 1106
 Plzák, Zbyněk, 1106
 Powell, John, 1131
 Punchihewa, S., 1078
 Quartara, Laura, 1077
 Ramer, Shawn E., 1099
 Ranganathan, Darshan, 1085
 Ranganathan, Subramania, 1085
 Rettig, Steven J., 1110
 Roberts, Stanley M., 1083
 Rousseau, Gérard, 1080
 Russowsky, D., 1053
 Salaün, Jacques, 1080
 Sasaki, Takuma, 1127
 Sauvage, Jean-Pierre, 1075
 Sawyer, Jeffery F., 1131
 Schröder, Martin, 1095
 Shahriari-Zavareh, Hooshang, 1058, 1061, 1064
 Sharma, Krishna, 1126
 Sim, George A., 1118
 Skelton, Brian W., 1093
 Slawin, Alexandra M. Z., 1054, 1066, 1070
 Spagnolo, Piero, 1050
 Spencer, Neil, 1061, 1064, 1066, 1070
 Štibr, Bohumil, 1106
 Stoddart, J. Fraser, 1054, 1058, 1061, 1064, 1066, 1070
 Sutin, Lori, 1112
 Tang, Kaluo, 1076
 Tang, Youqi, 1076
 Tasker, Peter A., 1124
 Taylor, Nicholas J., 1049
 Tennakone, K., 1078
 Tennant, George, 1095
 Thomson, Andrew J., 1086
 Tietje-Girault, Jödis, 1095
 van Eldik, Rudi, 1105
 Van Gestel, Françoise, 1049
 Vederas, John C., 1099
 Wade, Peter W., 1129
 White, Allan H., 1093
 Wickramanayake, S., 1078
 Willey, Gerald R., 1100
 Williams, David J., 1054, 1058, 1061, 1064, 1066, 1070
 Wright, Stanley H. B., 1102
 Yamamoto, Takakazu, 1117
 Yang, Qingchuan, 1076
 Youds, Peter, 1083
 Zarzycki, Ryszard, 1054

NEW BOOKS

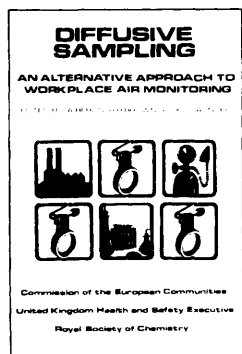
FROM THE ROYAL SOCIETY OF CHEMISTRY

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.

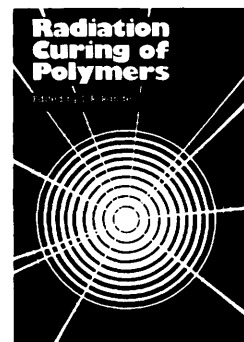
Radiation Curing of Polymers

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