

JOURNAL OF THE CHEMICAL SOCIETY

Chemical Communications

Number 2
1990

CONTENTS

- 93 The Crystal Structure of a μ -Phenolato Copper(II) Dinuclear Complex containing Two Chemically Distinct Metal Co-ordination Environments **Harry Adams, Gaynor Candeland, Jonathan D. Crane, David E. Fenton, Arnold J. Smith**
- 95 Liquid Crystalline Cyclic Polymers **Robert D. C. Richards, William D. Hawthorne, Jonathan S. Hill, Michael S. White, David Lacey, J. Anthony Semlyen, George W. Gray, Thomas C. Kendrick**
- 97 Hypervalent Iron-oxo Porphyrin Cation Radical Formation on Reaction of H_2O_2 with the Cytochrome-c-derived Haem Octapeptide Microperoxidase-8 (MP-8) in Aqueous Solution **Paul A. Adams, Richard D. Gould**
- 99 A New Method for determining Ionic Solvent Transport Numbers and Free Energy of Transfer of Electrolytes from Water to Mixed Aqueous Solvents **Robert D. O'Neill, Lobna Sheiha, W. Earle Waghorne, David Feakins**
- 100 Facile Synthesis of the 4-Azatricyclo[2.2.1.0^{2,6}]heptane System **Angus M. MacLeod, Richard Herbert, Karst Hoogsteen**
- 102 A Synthetic Approach to Gelsemicine **Neil K. Hamer**
- 103 Regioselective Hydroxylations of 1,3-Dienes *via* Hydrocobaltation Reactions. Facile Conversion of Myrcene to Geraniol and to (\pm)-Linalool **Amy R. Howell, Gerald Pattenden**
- 105 Unusual Routes to Complexes of Binary Alkali Metal–Non-metal Compounds: Preparations and Crystal and Solution Structures of $Li_2S_6 \cdot (tmeda)_2$ (*tmeda* = tetramethylethylenediamine), and Synthetic Extensions of the Routes **Arthur J. Banister, Donald Barr, Alan T. Brooker, William Clegg, Malcolm J. Cunnington, Michael J. Doyle, Simon R. Drake, Wendy R. Gill, Kenneth Manning, Paul R. Raithby, Ronald Snaith, Kenneth Wade, Dominic S. Wright**
- 107 Efficient Monoacetal Formation, Unprecedented β -Cleavage in Caged Cyclobutyl Ketones and Dual Epimerization of 1,4-Diones in the Photochemistry of Hexacyclo[10.2.1.0^{2,11}.0^{4,9}.0^{4,14}.0^{9,13}]pentadeca-5,7-diene-3,10-dione and Related Systems in Alcoholic Solvents **Bipin Pandey, Umesh R. Zope, Nagaraj R. Ayyangar**
- 110 Isolation and X-Ray Structure Determination of the Cluster Dianion $[Os_{20}Hg(C)_2(CO)_{48}]^{2-}$, and the Identification of the Cluster Previously reported with this Stoichiometry as $[Os_{18}Hg_3(C)_2(CO)_{42}]^{2-}$ **Lutz H. Gade, Brian F. G. Johnson, Jack Lewis, Mary McPartlin, Harold R. Powell**
- 113 A Novel Type of Non-enzymatic Reaction during the Late Steps in the Biosynthesis of the Angucycline Antibiotics Urdamycins C and D **Jürgen Rohr**
- 115 The Use of Surfactant Selective Electrodes in Non-aqueous Solvents **H. Gharibi, R. Palepu, G. J. T. Tiddy, D. G. Hall, E. Wyn-Jones**
- 116 The First Thermodynamic Data on the Complexation of Amino Acids with Cryptand 222 in Methanol at 298.15 K **Angela F. Danil de Namor, Marie Claude Ritt, Marie-José Schwing-Weill, Françoise Arnaud Neu, David F. V. Lewis**
- 118 Synthesis of Ethynyl(phenyl)iodonium Tetrafluoroborate. A New Reagent for Ethynylation of 1,3-Dicarbonyl Compounds **Masahito Ochiai, Takao Ito, Yoshikazu Takaoka, Yukio Masaki, Munetaka Kunishima, Shohei Tani, Yoshimitsu Nagao**
- 119 Metathesis Polymerization of 7-Oxa-2,3-bismethoxycarbonylbicyclo[2.2.1]hepta-2,5-diene: Synthesis of Novel Conjugated Polyenes **James G. Hamilton, Daniel G. Marquess, (the late) Terence J. O'Neill, John J. Rooney**
- 121 A New Type of 'Square Planar' Platinum(II) Complex showing Helical Chirality **Christine Deuschel-Cornioley, Helen Stoeckli-Evans, Alex von Zelewsky**
- 123 Intramolecular Electron Transfer in the Novel Photoreaction of some β,γ -Unsaturated Oxime–Boron Trifluoride Complexes. A New Synthetic Path to Dihydroisoxazoles **Diego Armesto, John C. Barnes, William M. Horspool, Fernando Langa**
- 125 The Electrochemistry of Proteins entrapped in Nafion **Clive E. W. Hahn, H. Allen O. Hill, Marcia D. Ritchie, John W. Sear**
- 126 Synthesis of a Troger's Base Analogue *via* Stereoselective Reductive Coupling of *N*-Phenylpiperazine to Norbornane-2,5-dione **H. E. Katz**

- 127 Photochemical Generation of 1,4-Diphenylbutane-1,4-diyl **Shigeo Kohmoto, Kazuhito Yamada, Umesh Joshi, Teruyuki Kawatani, Makoto Yamamoto, Kazutoshi Yamada**
- 129 Double Differentiation in Asymmetric Methoxyselenenylation of *trans*- β -Methylstyrene **Shuji Tomoda, Ken-ichi Fujita, Michio Iwaoka**
- 131 Simultaneous Crystallization of Two Dissimilar Zeolites from the System Ethylenediamine–Na₂O–Al₂O₃–SiO₂–H₂O–Triethylamine **Wenyang Xu, Jinxiang Dong, Jianquan Li**
- 132 The Preparation and Characterization by Raman Spectroscopy of PI₄⁺AsF₆⁻ containing the Tetraiodophosphonium Cation **Inis Tornieporth-Oetting, Thomas Klapötke**
- 134 Novel Route to Chiral Polymers involving Biocatalytic Transesterification of *O*-Acryloyl Oximes **A. Ghogare, G. Sudesh Kumar**
- 135 Poly-L-leucine as an Added Chiral Ligand for the Palladium catalysed Carbonylation of Allylic Alcohols **Howard Alper, Nathalie Hamel**
- 136 Synthetic Anthracyclines: Regiospecific Total Synthesis of a *D*-Ring Pyridine Analogue of 11-Deoxydaunomycin **Yasuyuki Kita, Masayuki Kirihara, Yuji Fujii, Ryuichi Okunaka, Shuji Akai, Hiroshi Maeda, Yasumitsu Tamura**
- 138 Thialactones formed by Intramolecular 'Ene' Reactions of Thioaldehydes **Samuel S.-M. Choi, Gordon W. Kirby, Mohinder P. Mahajan**
- 140 Diphosphine Platinum(II) Photo-oxidants. Synthesis and Photochemistry of Luminescent Diphosphine Platinum(II) Complexes of 5,6-Dimethyl-1,10-phenanthroline **Kam-To Wan, Chi-Ming Che**
- 142 The Demonstration of Selective Peptide Bond Formation in Clear Aqueous Solutions **Darshan Ranganathan, Girij Pal Singh**
- 144 Generation of Fe^{III}OEP–Hydrogen Peroxide Complex (OEP = octaethylporphyrinato) by Reduction of Fe^{II}OEP–O₂ with Ascorbic Acid Sodium Salt **Kunihiko Tajima, Masato Shigematsu, Junichi Jinno, Kazuhiko Ishizu, Hiroaki Ohya-Nishiguchi**
- 145 Carbon–Phosphorus Bond Cleavage and Carbon–Carbon Bond Formation at a Di-iron Centre: Formation of Ethyl Acrylate *via* Extrusion of Methylene from Bis(diphenylphosphino)methane **Graeme Hogarth, Selby A. R. Knox, Michael L. Turner**
- 146 Observation of a High Resolution Heteronuclear NMR Spectrum in an Inhomogeneous Magnetic Field **Suzanne L. Duce, Laurance D. Hall, Timothy J. Norwood**
- 148 The Stereochemistry of the Stork Silyl Methylene Radical Cyclisation in an Annulated Sugar Derivative **Roger V. Bonner, Michael J. Davies, Joshua Howarth, Paul R. Jenkins**
- 150 Synthesis of *O*-Heterocycles *via* Intramolecular Reductive Deoxygenation of *o*-Aroyloxyacetophenones: One-step Synthesis of Benzofurans **Asoke Banerji, Sandip K. Nayak**
- 151 Synthesis of Compounds active against HIV. Part 2. Preparation of some 2',3'-Dideoxy-6'-fluorocarbocyclic Nucleosides **Diane M. Coe, Peter L. Myers, David M. Parry, Stanley M. Roberts, Richard Storer**
- 153 [2 + 2] Cycloadditions between Electron-poor Phospha-alkene Complexes and Electron-rich Alkenes or Alkynes: A New Route to Phosphetane and 1,2-Dihydrophosphete Rings **Angela Marinetti, François Mathey**
- 155 A Conductive and Electroactive Elastomer: A Polyaniline–Nitrilic Rubber Composite **Eliana L. Tassi, Marco-A. De Paoli**
- 157 Electron Transfer in a Novel Synthetic Membrane Analogue for Cytochrome *c* **James Grimshaw, Jadwiga Trocha-Grimshaw**
- 158 Pentamacrocyclic Tris-crown Hosts: Selective Binding of Cationic, Anionic, and Neutral Guests **Fritz Vögtle, Alexander Wallon, Walter M. Müller, Ute Werner, Martin Nieger**
- 161 Silicon-directed Norrish Type I Cleavage of β -Trimethylsilyl Cycloalkanones **Jih Ru Hwu, Bryant A. Gilbert, Lung Ching Lin, Ben Ruey Liaw**
- 163 New Bowl-shaped Columnar Liquid Crystals **Giuseppe Cometti, Enrico Dalcanale, Annick Du vosel, Anne-Marie Levelut**
- 165 Direct Formation of Alcohols in Homogeneous Hydroformylation catalysed by Rhodium Complexes **Joanna K. MacDougall, David J. Cole-Hamilton**
- 167 Synthesis, Metal Complex Formation, and Resolution of a New C₂ Diazabiaryl Ligand: Cyclo-octa[2,1-*b*:3,4-*b'*]-dipyridine **Xiu Chun Wang, Yu Xin Cui, Thomas C. W. Mak, Henry N. C. Wong**
- 170 Facile Bond-forming and -breaking Process at Phosphorus, Carbon, and Oxygen Centres in Tungsten–Cobalt Complexes: X-Ray Crystal Structures of [WCo(OH)(μ -C₆H₄Me-4)(μ -PPh₂)₂(CO)₂(η -C₅H₅)], [WCo(O){ μ -C(C₆H₄Me-4)C(O)}(μ -PPh₂)(CO)(PPh₂H)(η -C₅H₅)], and the Novel Alkyne Complex [WCo(O){ μ -C(C₆H₄Me-4)C(OMe)}(μ -PPh₂)(CO)-(PPh₂H)(η -C₅H₅)] [BF₄] **El Amin E. El Amin, John C. Jeffery, Tracy M. Walters**
- 173 Evidence for an Open Transition State in the Transfer of a Carbonyl Acyl Group between Phenolate Anions **Mark A. Waring, Andrew Williams**
- 174 Synthesis of a Small Azacage which can Selectively encapsulate a Lithium Ion in Aqueous Solution **Andrea Bencini, Antonio Bianchi, Angela Borselli, Mario Ciampolini, Mauro Micheloni, Nicoletta Nardi, Paola Paoli, Barbara Valtancoli, Stefano Chimichi, Paolo Dapporto**
- 175 Simultaneous Inversion of Configuration of both the Chiral Ring and the Carbinol Carbon in (*E*)-(1*R*,2*R*)-Cyclo-oct-2-en-1-ol **Ayala Balan, Herman Ziffer**
- 177 Gallaborane, H₂Ga(μ -H)₂BH₂: Synthesis, Properties, and Structure of the Gaseous Molecule as determined by Electron Diffraction **Colin R. Pulham, Paul T. Brain, Anthony J. Downs, David W. H. Rankin, Heather E. Robertson**

- 179 Highly Luminescing Rhenium(1) Heterocyclic Ligand Tetracarbonyl Complexes **Randy J. Shaver, D. Paul Rillema, Clifton Woods**
- 180 Water-soluble Conducting Poly(aniline) Polymer **Jean-Yves Bergeron, Jean-Wilbert Chevalier, Lê H. Dao**
- 182 Selective Skeletal Rearrangement by Carbon–Carbon Bond Activation **Tamotsu Takahashi, Takayasu Fujimori, Takashi Seki, Masahiko Saburi, Yasuzo Uchida, Christophe J. Rousset, Ei-ichi Negishi**
- 183 Synthetic Peptidic Amphiphile: Reduction in Length of a Helical Bilayer Assembly due to Interaction with a Metal Cation **Toshimi Shimizu, Mariko Mori, Hiroyuki Minamikawa, Masakatsu Hato**
- 185 On the Boys–Bernardi Method to correct Interaction Energies calculated using Møller–Plesset Perturbation Theory **David B. Cook, Tomás L. Sordo, José A. Sordo**
- 186 Fluorescent PET (Photoinduced Electron Transfer) Sensors Selective for Submicromolar Calcium with Quantitatively Predictable Spectral and Ion-binding Properties **A. Prasanna de Silva, H. Q. Nimal Gunaratne**
- 189 Unusual Fluxional and T_1 Properties for $[\text{ReH}_4(\text{CO})(\text{PMe}_2\text{Ph})_3]^+$: a Polyhydride with Classical and Nonclassical Tautomers **Xiao-Liang Luo, Robert H. Crabtree**
- 190 Are there Anomeric Effects involving Selenium? **Ulrike Salzner, Paul von Ragué Schleyer**
- 193 The Preparation and X-Ray Structure of $\text{V}(\text{N}_3\text{S}_2)(\text{dtbc})(\text{phen})\cdot\text{CHCl}_3$ (dtbc = di-*t*-butylcatecholate, phen = phenanthroline) **Themistoklis A. Kabanos, Alexandra M. Z. Slawin, David J. Williams, J. Derek Woollins**
- 194 Electrochemical Reduction of Carbon Dioxide catalysed by Macrocyclic Fe_4S_4 Iron–Sulphur Clusters **Takenori Tomohiro, Kouichi Uoto, Hiroaki (Yohmei) Okuno**
- 195 Photocurrent Generation *via* Vertical Transport of a Photogenerated Electron through Electron Relay confined within Micropores of an Anodic Aluminium Oxide Film **Kohei Uosaki, Kentaro Okazaki, Hideaki Kita**
- 197 The Initial Reaction of $\text{Os}_3(\text{CO})_{12}$ with Halogens **Haleh K. Sanati, Anna Becalska, Andrew K. Ma, Roland K. Pomeroy**
- 199 Photoisomerization of 7-*cis*-Retinal. The Concentration Effect **S. Ganapathy, A. Trehan, R. S. H. Liu**

AUTHOR INDEX

- Adams, Harry, 93
 Adams, Paul A., 97
 Akai, Shuji, 136
 Alper, Howard, 135
 Armesto, Diego, 123
 Ayyangar, Nagaraj R., 107
 Balan, Ayala, 175
 Banerji, Asoke, 150
 Banister, Arthur J., 105
 Barnes, John C., 123
 Barr, Donald, 105
 Becalska, Anna, 197
 Bencini, Andrea, 174
 Bergeron, Jean-Yves, 180
 Bianchi, Antonio, 174
 Bonnert, Roger V., 148
 Borselli, Angela, 174
 Brain, Paul T., 177
 Brooker, Alan T., 105
 Candeland, Gaynor, 93
 Che, Chi-Ming, 140
 Chevalier, Jean-Wilbert, 180
 Chimichi, Stefano, 174
 Choi, Samuel S.-M., 138
 Ciampolini, Mario, 174
 Clegg, William, 105
 Coe, Diane M., 151
 Cole-Hamilton, David J., 165
 Cometti, Giuseppe, 163
 Cook, David B., 185
 Crabtree, Robert H., 189
 Crane, Jonathan D., 93
 Cui, Yu Xin, 167
 Cunningham, Malcolm J., 105
 Dalcanale, Enrico, 163
 Danil de Namor, Angela F., 116
 Dao, Lê H., 180
 Dapporto, Paolo, 174
 Davies, Michael J., 148
 De Paoli, Marco-A., 155
 de Silva, A. Prasanna, 186
 Deuschel-Cornioley, Christine, 121
 Dong, Jinxiang, 131
 Downs, Anthony J., 177
 Doyle, Michael J., 105
 Drake, Simon R., 105
 Du vosel, Annick, 163
 Duce, Suzanne L., 146
 El Amin, El Amin E., 170
 Feakins, David, 99
 Fenton, David E., 93
 Fujii, Yuji, 136
 Fujimori, Takayasu, 182
 Fujita, Ken-ichi, 129
 Gade, Lutz H., 110
 Ganapathy, S., 199
 Gharibi, H., 115
 Ghogare, A., 134
 Gilbert, Bryant A., 161
 Gill, Wendy R., 105
 Goold, Richard D., 97
 Gray, George W., 95
 Grimshaw, James, 157
 Gunaratne, H. Q. Nimal, 186
 Hahn, Clive E. W., 125
 Hall, D. G., 115
 Hall, Laurance D., 146
 Hamel, Nathalie, 135
 Hamer, Neil K., 102
 Hamilton, James G., 119
 Hato, Masakatsu, 183
 Hawthorne, William D., 95
 Herbert, Richard, 100
 Hill, H. Allen O., 125
 Hill, Jonathan S., 95
 Hogarth, Graeme, 145
 Hoogsteen, Karst, 100
 Horspool, William M., 123
 Howarth, Joshua, 148
 Howell, Amy R., 103
 Hwu, Jih Ru, 161
 Ishizu, Kazuhiko, 144
 Ito, Takao, 118
 Iwaoka, Michio, 129
 Jeffery, John C., 170
 Jenkins, Paul R., 148
 Jino, Junichi, 144
 Johnson, Brian F. G., 110
 Joshi, Umesh, 127
 Kabanos, Themistoklis A., 193
 Katz, H. E., 126
 Kawatuji, Teruyuki, 127
 Kendrick, Thomas C., 95
 Kirby, Gordon W., 138
 Kirihara, Masayuki, 136
 Kita, Hideaki, 195
 Kita, Yasuyuki, 136
 Klapötke, Thomas, 132
 Knox, Selby A. R., 145
 Kohmoto, Shigeo, 127
 Kumar, G. Sudesh, 134
 Kunishima, Munetaka, 118
 Lacey, David, 95
 Langa, Fernando, 123
 Levelut, Anne-Marie, 163
 Lewis, David F. V., 116
 Lewis, Jack, 110
 Li, Jianquan, 131
 Liaw, Ben Ruey, 161
 Lin, Lung Ching, 161
 Liu, R. S. H., 199
 Luo, Xiao-Liang, 189
 Ma, Andrew K., 197
 MacDougall, Joanna K., 165
 MacLeod, Angus M., 100
 McPartlin, Mary, 110
 Maeda, Hiroshi, 136
 Mahajan, Mohinder P., 138
 Mak, Thomas C. W., 167
 Manning, Kenneth, 105
 Marinetti, Angela, 153
 Marquess, Daniel G., 119
 Masaki, Yukio, 118
 Mathey, François, 153
 Micheloni, Mauro, 174
 Minamikawa, Hiroyuki, 183
 Mori, Mariko, 183
 Müller, Walter M., 158
 Myers, Peter L., 151
 Nagao, Yoshimitsu, 118
 Nardi, Nicoletta, 174
 Nayak, Sandip K., 150
 Negishi, Ei-ichi, 182
 Neu, Françoise Arnaud, 116
 Nieger, Martin, 158
 Norwood, Timothy J., 146
 Ochiai, Masahito, 118
 Ohya-Nishiguchi, Hiroaki, 144
 Okazaki, Kentaro, 195
 Okunaka, Ryuichi, 136
 Okuno, Hiroaki (Yohmei), 194
 O'Neill, Robert D., 99
 O'Neill, (the late) Terence J., 119
 Palepu, R., 115
 Pandey, Bipin, 107
 Paoli, Paola, 174
 Parry, David M., 151
 Pattenden, Gerald, 103
 Pomeroy, Roland K., 197
 Powell, Harold R., 110
 Pulham, Colin R., 177
 Raithby, Paul R., 105
 Ranganathan, Darshan, 142
 Rankin, David W. H., 177
 Richards, Robert D. C., 95
 Rillema, D. Paul, 179
 Ritchie, Marcia D., 125
 Ritt, Marie Claude, 116
 Roberts, Stanley M., 151
 Robertson, Heather E., 177
 Rohr, Jürgen, 113
 Rooney, John J., 119
 Rousset, Christophe J., 182
 Saburi, Masahiko, 182
 Salzner, Ulrike, 190
 Sanati, Haleh K., 197
 Schleyer, Paul von Ragué, 190
 Schwing-Weill, Marie-José, 116
 Sear, John W., 125
 Seki, Takashi, 182
 Semlyen, J. Anthony, 95
 Shaver, Randy J., 179
 Sheiha, Lobna, 99
 Shigematsu, Masato, 144
 Shimizu, Toshimi, 183
 Singh, Girij Pal, 142
 Slawin, Alexandra M. Z., 193
 Smith, Arnold J., 93
 Snaith, Ronald, 105
 Sordo, José A., 185
 Sordo, Tomás L., 185
 Stoeckli-Evans, Helen, 121
 Storer, Richard, 151
 Tajima, Kunihiko, 144
 Takahashi, Tamotsu, 182
 Takaoka, Yoshikazu, 118
 Tamura, Yasumitsu, 136
 Tani, Shohei, 118
 Tassi, Eliana L., 155
 Tiddy, G. J. T., 115
 Tomoda, Shuji, 129
 Tomohiro, Takenori, 194
 Torniepoorth-Oetting, Inis, 132
 Trehan, A., 199
 Trocha-Grimshaw, Jadwiga, 157
 Turner, Michael L., 145
 Uchida, Yasuzo, 182
 Uosaki, Kohei, 195
 Uoto, Kouichi, 194
 Valtancoli, Barbara, 174
 Vögtle, Fritz, 158
 von Zelewsky, Alex, 121
 Wade, Kenneth, 105
 Waghorne, W. Earle, 99
 Wallon, Alexander, 158
 Walters, Tracy M., 170
 Wan, Kam-To, 140
 Wang, Xiu Chun, 167
 Waring, Mark A., 173
 Werner, Ute, 158
 White, Michael S., 95
 Williams, Andrew, 173
 Williams, David J., 193
 Wong, Henry N. C., 167
 Woods, Clifton, 179
 Woollins, J. Derek, 193
 Wright, Dominic S., 105
 Wyn-Jones, E., 115
 Xu, Wenyang, 131
 Yamada, Kazuhito, 127
 Yamada, Kazutoshi, 127
 Yamamoto, Makoto, 127
 Ziffer, Herman, 175
 Zope, Umesh R., 107

In the Notice to Authors, Issue No. 1 of *Chemical Communications*, 1990, p. 2, the supplier of ChemDraw was given incorrectly as Molecular Design Ltd. rather than Cambridge Scientific Computing. We apologise for this error.