

JOC *Recent Reviews*

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compiled by Veronica M. Cornel

Department of Chemistry, Reedley College, 339 West Carpenter Avenue, Reedley, California 93654

vmcornel@sccd.org

Reviews are listed in order of appearance in the sources indicated. In multidisciplinary review journals, only those reviews which fall within the scope of this Journal are included. Sources are listed alphabetically in three categories: regularly issued review journals and series volumes, contributed volumes, and other monographs. Titles are numbered serially, and these numbers are used for reference in the index.

Major English-language sources of critical reviews are covered. Encyclopedic treatises, annual surveys such as *Specialist Periodical Reports*, and compilations of symposia proceedings are omitted.

This installment of *Recent Reviews* covers principally the early part of the 2005 literature. Previous installment: *J. Org. Chem.* **2005**, 70(7), 2885–92.

Supporting Information Available: A file containing this *Recent Review* compilation in Microsoft Word and the data in plain text that can be imported into Endnote (using Refer style) and Reference Manager databases. This material is available free of charge via the Internet at <http://pubs.acs.org>.

Regularly Issued Journals and Series Volumes

Accounts of Chemical Research

1. Srinivasan, A.; Furuta, H. Confusion Approach to Porphyrinoid Chemistry. **2005**, 38(1), 10–20.

2. Gomez-Gallego, M.; Mancheno, M. J.; Sierra, M. A. Catalytic Transmetalation from Group 6 Fischer Carbene Complexes: An Emerging Powerful Tool in Organic Synthesis. **2005**, 38(1), 44–53.

3. Stepien, M.; Latos-Grazynski, L. Benziporphyrins: Exploring Arene Chemistry in a Macrocyclic Environment. **2005**, 38(2), 88–98.

4. Nifant'ev, E. E.; Maslennikova, V. I.; Merkulov, R. V. Design and Study of Phosphocavitands—A New Family of Cavity Systems. **2005**, 38(2), 108–16.

5. Nishikiori, S.-i.; Yoshikawa, H.; Sano, Y.; Iwamoto, T. Inorganic–Organic Hybrid Molecular Architectures of Cyanometalate Host and Organic Guest Systems: Specific Behavior of the Guests. **2005**, 38(4), 227–34.

6. Hatton, B.; Landskron, K.; Whitnall, W.; Perovic, D.; Ozin, G. A. Past, Present, and Future of Periodic Mesoporous Organosilicas—The PMOs. **2005**, 38(4), 305–12.

7. Hosseini, M. W. Molecular Tectonics: From Simple Tectons to Complex Molecular Networks. **2005**, 38(4), 313–23.

8. Fiedler, D.; Leung, D. H.; Bergman, R. G.; Raymond, K. N. Selective Molecular Recognition, C–H Bond Activation, and Catalysis in Nanoscale Reaction Vessels. **2005**, 38(4), 349–58.

Advances in Heterocyclic Chemistry

9. van der Plas, H. Oxidative Amino-Dehydrogenation of Azines. **2004**, 86, 1–40.

10. Kleinpeter, E. Conformational Analysis of Saturated Heterocyclic Six-Membered Rings. **2004**, 86, 41–127.

11. Furin, G. G. Fluorine-Containing Heterocycles. Part I. Synthesis by Intramolecular Cyclization. **2004**, 86, 129–224.

12. Koser, G. F. The Synthesis of Heterocyclic Compounds with Hypervalent Organoiodine Reagents. **2004**, 86, 225–92.

Advances in Organometallic Chemistry

13. Corey, J. Y. Dehydrocoupling of Hydrosilanes to Polysilanes and Silicon Oligomers: A 30 Year Overview. **2004**, 51, 1–52.

14. Uhl, W. Organoelement Compounds Possessing Al–Al, Ga–Ga, In–In, and Tl–Tl Single Bonds. **2004**, 51, 53–108.

15. Erker, G.; Kehr, G.; Froehlich, R. The (Butadiene)–Zirconocenes and Related Compounds. **2004**, 51, 109–62.

16. Braunschweig, H. Borylenes as Ligands to Transition Metals. **2004**, 51, 163–92.

17. Dembitsky, V. M.; Ali, H. A.; Srebnik, M. Recent Chemistry of the Diboron Compounds. **2004**, 51, 193–250.

18. Welton, T.; Smith, P. J. Palladium Catalyzed Reactions in Ionic Liquids. **2004**, 51, 251–84.

Angewandte Chemie, International Edition in English

19. Spivey, A. C.; Arseniyadis, S. Nucleophilic Catalysis by 4-(Dialkylamino)Pyridines Revisited—The Search for Optimal Reactivity and Selectivity. **2004**, 43(41), 5436–41.

20. Morimoto, T.; Kakiuchi, K. Evolution of Carbonylation Catalysis: No Need for Carbon Monoxide. **2004**, *43*(42), 5580–8.

21. Mukaiyama, T. Explorations into New Reaction Chemistry. **2004**, *43*(42), 5590–614.

22. Dai, L.-X. Immobilized Catalysts: Chiral Metal–Organic Assemblies—A New Approach to Immobilizing Homogeneous Asymmetric Catalysts. **2004**, *43*(43), 5726–9.

23. Dubrovina, N. V.; Boerner, A. Enantioselective Catalysis with Chiral Phosphine Oxide Preligands. **2004**, *43*(44), 5883–6.

24. Alder, R. W.; Blake, M. E.; Chaker, L.; Harvey, J. N.; Paolini, F.; Schuetz, J. When and How do Diaminocarbenes Dimerize? **2004**, *43*(44), 5896–911.

25. Balme, G. Heterocycle Synthesis: Pyrrole Syntheses by Multicomponent Coupling Reactions. **2004**, *43*(46), 6238–41.

26. Niess, B.; Hoffmann, H. M. R. [4+3] Cycloadducts from Lewis Acid Mediated Reactions of Acroleins with Cyclopentadiene. **2004**, *44*(1), 26–9.

27. Eames, J.; Suggate, M. J. Recent Developments in the Transfer of Chirality within Enolate Alkylation Reactions. **2004**, *44*(2), 186–9.

28. Nyffeler, P. T.; Duron, S. G.; Burkart, M. D.; Vincent, S. P.; Wong, C.-H. Selectfluor: Mechanistic Insight and Applications. **2004**, *44*(2), 192–212.

29. Shimizu, M.; Hiyama, T. Modern Synthetic Methods for Fluorine-Substituted Target Molecules. **2004**, *44*(2), 214–31.

30. Christmann, U.; Vilar, R. Monoligated Palladium Species as Catalysts in Cross-Coupling Reactions. **2005**, *44*(3), 366–74.

31. Schlosser, M. The 2 × 3 Toolbox of Organometallic Methods for Regiochemically Exhaustive Functionalization. **2005**, *44*(3), 376–93.

32. Weidenbruch, M. Molecules with a Genuine Si–Si Triple Bond and a Stable Derivative of [SiH]⁺. **2005**, *44*(4), 514–6.

33. Frisch, A. C.; Beller, M. Catalysts for Cross-Coupling Reactions with Non-Activated Alkyl Halides. **2005**, *44*(5), 674–88.

34. Brown, R. C. D. Developments in Furan Syntheses. **2005**, *44*(6), 850–2.

35. Kaufman, T. S.; Ruveda, E. A. The Quest for Quinine: Those Who Won the Battles and Those Who Won the War. **2005**, *44*(6), 854–85.

36. Luetzen, A. Self-Assembled Molecular Capsules—Even More than Nano-Sized Reaction Vessels. **2005**, *44*(7), 1000–2.

37. Nicolaou, K. C.; Snyder, S. A. Chasing Molecules That Were Never There: Misassigned Natural Products and the Role of Chemical Synthesis in Modern Structure Elucidation. **2005**, *44*(7), 1012–44.

38. Enders, D.; Voith, M.; Lenzen, A. The Dihydroxyacetone Unit—A Versatile C₃ Building Block in Organic Synthesis. **2005**, *44*(9), 1304–25.

39. Lukin, O.; Voegtle, F. Knotting and Threading of Molecules: Chemistry and Chirality of Molecular Knots and Their Assemblies. **2005**, *44*(10), 1456–77.

40. Dunitz, J. D.; Gavezzotti, A. Molecular Recognition in Organic Crystals: Directed Intermolecular Bonds or Nonlocalized Bonding? **2005**, *44*(12), 1766–87.

41. Paulini, R.; Mueller, K.; Diederich, F. Orthogonal Multipolar Interactions in Structural Chemistry and Biology. **2005**, *44*(12), 1788–805.

Chemical Reviews

42. Watanabe, M.; Sato, T.; Inomata, H.; Smith, R. L., Jr.; Arai, K.; Kruse, A.; Dinjus, E. Chemical Reactions of C₁ Compounds in Near-Critical and Supercritical Water. **2004**, *104*(12), 5803–21.

43. van Staveren, D. R.; Metzler-Nolte, N. Bioorganometallic Chemistry of Ferrocene. **2004**, *104*(12), 5931–85.

44. Moonen, K.; Laureyn, I.; Stevens, C. V. Synthetic Methods for Azaheterocyclic Phosphonates and Their Biological Activity. **2004**, *104*(12), 6177–215.

45. Bolm, C.; Legros, J.; Le Paih, J.; Zani, L. Iron-Catalyzed Reactions in Organic Synthesis. **2004**, *104*(12), 6217–54.

46. Salaun, J. π -1,1-Dimethyleneallylmetal and Homologous Complexes: Their Application in Organic Synthesis. **2005**, *105*(1), 285–312.

47. Garcia-Urdiales, E.; Alfonso, I.; Gotor, V. Enantioselective Enzymatic Desymmetrizations in Organic Synthesis. **2005**, *105*(1), 313–54.

48. Leroux, F.; Jeschke, P.; Schlosser, M. α -Fluorinated Ethers, Thioethers, and Amines: Anomerically Biased Species. **2005**, *105*(3), 827–56.

49. Brunel, J. M. BINOL: A Versatile Chiral Reagent. **2005**, *105*(3), 857–97.

50. Palacios, F.; Alonso, C.; De los Santos, J. M. Synthesis of β -Aminophosphonates and -Phosphinates. **2005**, *105*(3), 899–931.

51. Ballini, R.; Bosica, G.; Fiorini, D.; Palmieri, A.; Petrini, M. Conjugate Additions of Nitroalkanes to Electron-Poor Alkenes: Recent Results. **2005**, *105*(3), 933–71.

52. Wasilke, J.-C.; Obrey, S. J.; Baker, R. T.; Bazan, G. C. Concurrent Tandem Catalysis. **2005**, *105*(3), 1001–20.

53. Vriezema, D. M.; Aragonés, M. C.; Elemans, J. A. A. W.; Cornelissen, J. J. L. M.; Rowan, A. E.; Nolte, R. J. M. Self-Assembled Nanoreactors. **2005**, *105*(4), 1445–89.

Chemical Society Reviews

54. Hadjoudis, E.; Mavridis, I. M. Photochromism and Thermochromism of Schiff Bases in the Solid State: Structural Aspects. **2004**, *33*(9), 579–88.

55. Jun, C.-H. Transition Metal-Catalyzed Carbon–Carbon Bond Activation. **2004**, *33*(9), 610–8.

56. Cesar, V.; Bellemin-Lapponnaz, S.; Gade, L. H. Chiral N–Heterocyclic Carbenes as Stereodirecting Ligands in Asymmetric Catalysis. **2004**, *33*(9), 619–36.

57. Reichenbaecher, K.; Suess, H. I.; Hulliger, J. Fluorine in Crystal Engineering—“The Little Atom That Could”. **2005**, *34*(1), 22–30.

58. Ramaiah, D.; Sajimon, M. C.; Joseph, J.; George, M. V. Photoisomerisation of Dibenzobarrelenes. A Facile Route to Polycyclic Synthons. **2005**, *34*(1), 48–57.

59. Frere, P.; Skabara, P. J. Salts of Extended Tetra-thiafulvalene Analogues: Relationships Between Molec-

ular Structure, Electrochemical Properties and Solid State Organization. **2005**, *34*(1), 69–98.

60. de la Hoz, A.; Diaz-Ortiz, A.; Moreno, A. Microwaves in Organic Synthesis. Thermal and Non-Thermal Microwave Effects. **2005**, *34*(2), 164–78.

61. Watts, P.; Haswell, S. J. The Application of Micro Reactors for Organic Synthesis. **2005**, *34*(3), 235–46.

Chemistry and Industry

62. Thirsk, C.; Jay, D. Molecular Catalysis: Cleaner, Greener Catalysts. **2004**, (16), 15–7.

63. Swinson, J. The Fluorine Phenomena. **2004**, (24), 20–1.

Chemistry of Heterocyclic Compounds

64. Khoshtariya, T. E. Synthesis and Characteristics of Tetracyclic Systems of Benzo[*b*]Furoindoles and Their Derivatives. **2004**, *40*(8), 967–78.

65. Nekrasov, D. D. Hetarylcyanamides. (Review). **2004**, *40*(9), 1107–23.

CHEMTRACTS: Organic Chemistry

66. Gray, B. L.; Ley, S. V. Evolving Cascades: The Claisen Rearrangement in the Development of Tandem Sequences of Three or More Reactions. **2004**, *17*(5), 235–41.

67. Appendino, G.; Casiraghi, G.; Zanardi, F. Resurrecting the Cornforth Model for Carbonyl Addition: Studies on the Origin of the 1,2-Asymmetric Induction in Enolate Addition to Heteroatom-Substituted Aldehydes. **2004**, *17*(5), 242–9.

68. Manyem, S.; Sibi, M. P. The Nature, Limits, and Implications of Asymmetric Autocatalysis. **2004**, *17*(5), 255–60.

69. O'Doherty, G.; Mortensen, M. Several Approaches to Perhydrohistrionicotoxin: Setting an Azaspirocenter. **2004**, *17*(5), 261–8.

70. Kresge, A. J. The Photochemical Wolff Rearrangement of 3-Diazo-1,1,1-Trifluoro-2-Propanone Revisited. **2004**, *17*(5), 269–71.

71. Lynch, J. K.; Schrimpf, M. R. Recent Syntheses of (+)-Brefeldin A. **2004**, *17*(5), 272–82.

72. Kellogg, R. M. A Synthesis of Sumanene, a Fullerene Fragment. **2004**, *17*(5), 283–5.

Coordination Chemistry Reviews

73. Winter, R. F.; Zalis, S. Allenylidene Complexes of Ruthenium: Synthesis, Spectroscopy and Electron-Transfer Properties. **2004**, *248*(15–16), 1565–83.

74. Rigaut, S.; Touchard, D.; Dixneuf, P. H. Ruthenium–Allenylidene Complexes and Their Specific Behaviour. **2004**, *248*(15–16), 1585–601.

75. Bruce, M. I. Metal Complexes Containing Cumulenylidene Ligands, {LmM}:C(:C)n:CRR' (n>2). **2004**, *248*(15–16), 1603–25.

76. Cadierno, V.; Gamasa, M. P.; Gimeno, J. Synthesis and Reactivity of α,β -Unsaturated Alkylidene and Cumulenylidene Group 8 Half-Sandwich Complexes. **2004**, *248*(15–16), 1627–57.

77. Fischer, H.; Szesni, N. π -Donor-Substituted Metallocumulenes of Chromium and Tungsten. **2004**, *248*(15–16), 1659–77.

78. Valyaev, D. A.; Semeikin, O. V.; Ustynyuk, N. A. Redox Induced Reactions of Transition Metal Vinylidene and Related Complexes. **2004**, *248*(15–16), 1679–92.

79. Werner, H. Vinylidenerhodium Complexes as Promising Tools for C–C Coupling Reactions. **2004**, *248*(15–16), 1693–702.

80. Katayama, H.; Ozawa, F. Vinylideneruthenium Complexes in Catalysis. **2004**, *248*(15–16), 1703–15.

81. Barbaro, P.; Bianchini, C.; Giambastiani, G.; Parisel, S. L. Progress in Stereoselective Catalysis by Metal Complexes with Chiral Ferrocenyl Phosphines. **2004**, *248*(21–24), 2131–50.

82. Dieguez, M.; Pamies, O.; Ruiz, A.; Diaz, Y.; Castillon, S.; Claver, C. Carbohydrate Derivative Ligands in Asymmetric Catalysis. **2004**, *248*(21–24), 2165–92.

83. Peris, E.; Crabtree, R. H. Recent Homogeneous Catalytic Applications of Chelate and Pincer N-Heterocyclic Carbenes. **2004**, *248*(21–24), 2239–46.

84. Crudden, C. M.; Allen, D. P. Stability and Reactivity of N-Heterocyclic Carbene Complexes. **2004**, *248*(21–24), 2247–73.

85. Slagt, M. Q.; van Zwieten, D. A. P.; Moerkerk, A. J. C. M.; Gebbink, R. J. M. K.; van Koten, G. NCN-Pincer Palladium Complexes with Multiple Anchoring Points for Functional Groups. **2004**, *248*(21–24), 2275–82.

86. Ferre-Filmon, K.; Delaude, L.; Demonceau, A.; Noels, A. F. Catalytic Methods for the Synthesis of Stilbenes with an Emphasis on Their Phytoalexins. **2004**, *248*(21–24), 2323–36.

87. Beletskaya, I. P.; Cheprakov, A. V. Copper in Cross-Coupling Reactions. **2004**, *248*(21–24), 2337–64.

88. Moiseev, I. I.; Vargaftik, M. N. Allylic Oxidation of Alkenes with Palladium Catalysts. **2004**, *248*(21–24), 2381–91.

Current Medicinal Chemistry

89. Musonda, C. C.; Chibale, K. Application of Combinatorial and Parallel Synthesis Chemistry Methodologies to Antiparasitic Drug Discovery. **2004**, *11*(19), 2519–33.

Current Organic Chemistry

90. Brewster, R. E.; Caran, K. L.; Sasine, J. S.; Shuker, S. B. Peptidocalixarenes in Molecular Recognition. **2004**, *8*(10), 867–81.

91. Yiotakis, A.; Georgiadis, D.; Matziari, M.; Makaritis, A.; Dive, V. Phosphinic Peptides: Synthetic Approaches and Biochemical Evaluation as Zn-Metalloprotease Inhibitors. **2004**, *8*(12), 1135–58.

92. Sharma, G. V. M.; Krishna, P. R. Carbohydrates: From 'Chirons' to New Glycosubstances. **2004**, *8*(13), 1187–209.

93. Lee, G. H.; Youn, I. K.; Choi, E. B.; Lee, H. K.; Yon, G. H.; Yang, H. C.; Pak, C. S. Magnesium in Methanol (Mg/MeOH) in Organic Syntheses. **2004**, *8*(13), 1263–87.

94. Fearnley, S. P. 2-(3H)-Oxazolone—A Simple Heterocycle with Manifold Potential. **2004**, *8*(14), 1289–337.

95. Lee, S.-G.; Kim, J.-J.; Kim, H.-K.; Kweon, D.-H.; Kang, Y.-J.; Cho, S.-D.; Kim, S.-K.; Yoon, Y.-J. Recent Progress in Pyridazin-3(2H)-ones Chemistry. **2004**, *8*(15), 1463–80.

96. Giacomelli, G.; Porcheddu, A.; de Luca, L. [1,3,5]-Triazine: A Versatile Heterocycle in Current Applications of Organic Chemistry. **2004**, *8*(15), 1497–519.

97. Florio, S.; Capriati, V.; Luisi, R. Lithiated α -Chloroalkylheterocycles: Utility in Synthetic Organic Chemistry. **2004**, *8*(16), 1529–45.

98. Tsoungas, P. G.; Diplas, A. I. Reductive Cyclization in the Synthesis of 5-membered N-Heterocycles. **2004**, *8*(16), 1579–606.

99. Tsoungas, P. G.; Diplas, A. I. Reductive Cyclization in the Synthesis of 6-membered N-Heterocycles. **2004**, *8*(16), 1607–28.

100. Gong, Y.; Kato, K. Recent Applications of Trifluoroacetaldehyde Ethyl Hemiacetal for the Synthesis of Trifluoromethylated Compounds. **2004**, *8*(17), 1659–75.

101. Yang, C.-G.; Huang, H.; Jiang, B. Progress in Studies of Novel Marine Bis(Indole) Alkaloids. **2004**, *8*(17), 1691–720.

102. Franchi, P.; Lucarini, M.; Pedulli, G. F. Use of Nitroxide Radicals to Investigate Supramolecular Entities. **2004**, *8*(18), 1831–49.

103. Ciriminna, R.; Pagliaro, M. Catalysis by Sol-Gels: An Advanced Technology for Organic Chemistry. **2004**, *8*(18), 1851–62.

104. Pastor, I. M.; Yus, M. Asymmetric Ring Opening of Epoxides. **2005**, *9*(1), 1–29.

105. Botta, B.; Cassani, M.; D'Acquarica, I.; Misiti, D.; Subissati, D.; Delle Monache, G. Resorcarenes. Emerging Class of Macrocyclic Receptors. **2005**, *9*(4), 337–55.

106. Zalan, Z.; Lazar, L.; Fueleop, F. Chemistry of Hydrazinoalcohols and Their Heterocyclic Derivatives. Part 1. Synthesis of Hydrazinoalcohols. **2005**, *9*(4), 357–76.

107. Sinou, D. Synthesis of 2,3-Dihydro-2-ylidene-1,4-benzodioxins. **2005**, *9*(4), 377–87.

Current Organic Synthesis

108. Martins, M. A. P.; Cunico, W.; Pereira, C. M. P.; Sinhorin, A. P.; Flores, A. F. C.; Bonacorso, H. G.; Zanatta, N. 4-Alkoxy-1,1,1-trichloro-3-alken-2-ones: Preparation and Applications in Heterocyclic Synthesis. **2004**, *1*(4), 391–403.

109. Musumeci, D.; Sica, D.; Zollo, F. Synthesis of Polyoxygenated Steroids with Transition Metal-Based Oxidants: Methyltrioxorhenium–Hydrogen Peroxide System, Ruthenium Tetraoxide, Osmium Tetraoxide and Potassium Permanganate. **2005**, *2*(1), 1–20.

110. Pyne, S. G. Recent Developments on the Synthesis of (–)-Swainsonine and Analogues. **2005**, *2*(1), 39–57.

111. Zhdankin, V. V. Benziodoxole-Based Hypervalent Iodine Reagents in Organic Synthesis. **2005**, *2*(1), 121–45.

Heterocycles

112. Pace, A.; Pibiri, I.; Buscemi, S.; Vivona, N. Molecular Rearrangements of 1-Oxa-2-azoles as an Ex-

pedient Route to Fluorinated Heterocyclic Compounds. **2004**, *63*(11), 2627–48.

113. Ghosh, C. K. Heterocycles Directly Linked to 3-Position of 1-Benzopyran-4-Ones. **2004**, *63*(12), 2875–98.

114. Rahm, F.; Hayes, P. Y.; Kitching, W. Metabolites from Marine Sponges of the Genus *Plakortis*. **2004**, *64*, 523–75.

115. Krow, G. R.; Cannon, K. C. 2-Azabicyclo[2.2.0]hex-5-enes and 2-Azabicyclo[2.2.0]hexanes. A Review. **2004**, *64*, 577–603.

116. Wang, Y.; Tennyson, R. L.; Romo, D. β -Lactones: Intermediates for Natural Product Total Synthesis and New Transformations. **2004**, *64*, 605–58.

117. Purrello, G. Some Aspects of the Willgerodt–Kindler Reaction and Connected Reactions. **2005**, *65*(2), 411–49.

118. Konieczny, M. T.; Konieczny, W. Synthesis and Reactivity of Thioaurones Over the Past One Hundred Years. **2005**, *65*(2), 451–64.

Journal of Fluorine Chemistry

119. Haufe, G. Regio- and Stereoselective Synthesis of Vicinal Fluorohydrins. **2004**, *125*(6), 875–94.

120. Miethchen, R. Modified Natural Substances-Fluorinated and Fluoroalkylated Monosaccharides and Inositols. **2004**, *125*(6), 895–901.

121. Soloshonok, V. A.; Berbasov, D. O. Synthesis of Fluorine-Containing Compounds Under Operationally Convenient Conditions. **2004**, *125*(11), 1757–63.

122. Roesky, H. W. Preparation of Fluorine Compounds of Groups 13 and 14: A Study Case for the Diagonal Relationship of Aluminum and Germanium. **2004**, *125*(11), 1765–9.

Journal of Heterocyclic Chemistry

123. Sekhar, B. C. Cyclic 1,3-Diones and Their Derivatives—As Versatile Reactive Intermediates in the Syntheses of Condensed Fused Ring Heterocycles. **2004**, *41*(6), 807–55.

124. Kouznetsov, V. V. Quinolines Spiro Annulated at Heterocyclic Fragment: Synthesis and Properties. **2005**, *42*(1), 39–59.

Journal of Organometallic Chemistry

125. Moreno-Manas, M.; Pleixats, R.; Sebastian, R. M.; Vallribera, A.; Roglans, A. Organometallic Chemistry of 15-Membered Tri-Olefinic Macrocycles: Catalysis by Palladium(0) Complexes in Carbon–Carbon Bond-Forming Reactions. **2004**, *689*(23), 3669–84.

126. Gibson, S. E.; Lewis, S. E.; Mainolfi, N. Transition Metal-Mediated Routes to Cyclopentenones. **2004**, *689*(24), 3873–90.

127. McGrath, T. D.; Stone, F. G. A. Metal Complexes of Monocarbon Carboranes Bearing C-Amine or -Amino Substituents. **2004**, *689*(24), 3891–903.

128. Power, P. P. Some Highlights From the Development and Use of Bulky Monodentate Ligands. **2004**, *689*(24), 3904–19.

129. Beck, V.; O'Hare, D. Triple-Decker Transition Metal Complexes Bridged by a Single Carbocyclic Ring. **2004**, *689*(24), 3920–38.

130. Braunstein, P. Functional Ligands and Complexes for New Structures, Homogeneous Catalysts and Nanomaterials. **2004**, *689*(24), 3953–67.

131. Beletskaya, I. P.; Cheprakov, A. V. Palladacycles in Catalysis—A Critical Survey. **2004**, *689*(24), 4055–82.

132. Crabtree, R. H. Organometallic Alkane CH Activation. **2004**, *689*(24), 4083–91.

133. Wakatsuki, Y. Mechanistic Aspects Regarding the Formation of Metal Vinylidenes from Alkynes and Related Reactions. **2004**, *689*(24), 4092–109.

134. Thomas, J. M.; Raja, R. Catalytic Significance of Organometallic Compounds Immobilized on Mesoporous Silica: Economically and Environmentally Important Examples. **2004**, *689*(24), 4110–24.

135. Petrella, A. J.; Raston, C. L. Calixarenes as Platforms for the Construction of Multimetallic Complexes. **2004**, *689*(24), 4125–36.

136. Kuehn, F. E.; Scherbaum, A.; Herrmann, W. A. Methyltrioxorhenium and Its Applications in Olefin Oxidation, Metathesis and Aldehyde Olefination. **2004**, *689*(24), 4149–64.

137. Mori, M. Activation of Nitrogen for Organic Synthesis. **2004**, *689*(24), 4210–27.

138. Astruc, D. Organoiron Activation Combined with Electron- and Proton Transfer: Implications in Biology, Organic Synthesis, Catalysis and Nanosciences. **2004**, *689*(24), 4332–44.

139. Bennett, M. A.; Byrnes, M. J.; Kovacic, I. The Fragment Bis(acetylacetonato)ruthenium: A Meeting-Point of Coordination and Organometallic Chemistry. **2004**, *689*(24), 4463–74.

140. Kira, M. Isolable Silylene, Disilenes, Trisilaallene, and Related Compounds. **2004**, *689*(24), 4475–88.

141. Kurosawa, H. From Mononuclear to Multinuclear Complexes of Palladium Containing Unsaturated Hydrocarbon Ligands. **2004**, *689*(24), 4511–20.

142. Mitsudo, T.-a.; Ura, Y.; Kondo, T. Ru(η^6 -1,3,5-Cyclooctatriene)(η^2 -Dimethyl fumarate)₂: A Novel, Versatile Zerovalent Ruthenium Complex with Electron-Deficient Olefinic Ligands. **2004**, *689*(24), 4530–9.

143. Akita, M. Coordinatively Unsaturated Organometallic System Based on Tp Ligand: Tetrahedral TpRM-R' and TpRM-M'Ln Species. **2004**, *689*(24), 4540–51.

144. Nakamura, A.; Mashima, K. Diene Complexes of Early Transition Metals: Ideas and Progresses at Osaka University. **2004**, *689*(24), 4552–63.

145. Matsumoto, K.; Sugiyama, H. Novel C–H Activation and C–S Formation Reactions on Disulfide and Diselenide Ligands in Dinuclear Ruthenium Complexes. **2004**, *689*(24), 4564–75.

146. Nakamura, E. Bucky Ferrocene and Ruthenocene: Serendipity and Discoveries. **2004**, *689*(24), 4630–35.

147. Barluenga, J.; Fernandez-Rodriguez, M. A.; Aguilár, E. Group 6 Fischer Carbene Complexes: “Chemical Multitalents” for Multi-Component Reactions. **2005**, *690*(3), 539–87.

Journal of Physical Organic Chemistry

148. Dawid, M.; Reid, D. L.; Warkentin, J.; Mloston, G. Reactions of Dimethoxycarbene with Carbon–Sulfur Double Bonds. **2005**, *18*(2), 86–9.

149. Speranza, M. Dynamics and Reactivity of Chiral Ion–Dipole Pairs. **2005**, *18*(2), 90–5.

150. Adler, M.; Adler, S.; Boche, G. Tetrahedral Intermediates in Reactions of Carboxylic Acid Derivatives with Nucleophiles. **2005**, *18*(3), 193–209.

Natural Product Reports

151. Hamilton, C. J. Enzymes in Preparative Mono- and Oligo-Saccharide Synthesis. **2004**, *21*(3), 365–85.

152. Michael, J. P. Indolizidine and Quinolizidine Alkaloids. **2004**, *21*(5), 625–49.

153. Michael, J. P. Quinoline, Quinazoline and Acridone Alkaloids. **2004**, *21*(5), 650–68.

154. Fraga, B. M. Natural Sesquiterpenoids. **2004**, *21*(5), 669–93.

155. Hanson, J. R. Diterpenoids. **2004**, *21*(6), 785–93.

New Journal of Chemistry

156. Fache, F. Asymmetric Fluorous Catalysis: The Particular Case of Nitrogen-Containing Chiral Auxiliaries. **2004**, *28*(11), 1277–83.

157. Zanda, M. Trifluoromethyl Group: An Effective Xenobiotic Function for Peptide Backbone Modification. **2004**, *28*(12), 1401–11.

158. Majoral, J.-P.; Zablocka, M. Zirconate Complexes: Multifaceted Reagents. **2005**, *29*(1), 32–41.

159. Astruc, D. The Metathesis Reactions: From a Historical Perspective to Recent Developments. **2005**, *29*(1), 42–56.

Pure and Applied Chemistry

160. Szejtli, J. Past, Present, and Future of Cyclodextrin Research. **2004**, *76*(10), 1825–45.

161. Padwa, A. Tandem Methodology for Heterocyclic Synthesis. **2004**, *76*(11), 1933–52.

162. Tietze, L. F.; Rackelmann, N. Domino Reactions in the Synthesis of Heterocyclic Natural Products and Analogs. **2004**, *76*(11), 1967–83.

Russian Chemical Reviews

163. Dolgushin, F. M.; Yanovsky, A. I.; Antipin, M. Y. Metallacyclopentadienes: Structural Features and Coordination in Transition Metal Complexes. **2004**, *73*(6), 517–40.

164. Glushkov, V. A.; Tolstikov, A. G. Chiral 1,3,2-Oxazaborolidines in Asymmetric Synthesis: Recent Advances. **2004**, *73*(6), 581–608.

165. Gavrilov, K. N.; Bondarev, O. G.; Polosukhin, A. I. Chiral Phosphites as Ligands in Asymmetric Metal Complex Catalysis and Synthesis of Coordination Compounds. **2004**, *73*(7), 671–99.

166. Korotchenko, V. N.; Nenajdenko, V. G.; Balenkova, E. S.; Shastin, A. V. Olefination of Carbonyl Compounds: Modern and Classical Methods. **2004**, *73*(10), 957–89.

167. Denisov, E. T.; Denisova, T. G. Physicochemical Aspects of Isomerisation of Free Radicals. **2004**, *73*(11), 1091–119.

168. Pavlov, V. A. The Central Chirality of the Metal Atom and Configurational Relations in Asymmetric Reactions Catalysed by Metal Complexes. **2004**, *73*(12), 1173–209.

Russian Journal of Organic Chemistry

169. Shokova, E. A.; Kovalev, V. V. Homooxacalixarenes. Part I. Structure, Synthesis, and Chemical Reactions. **2004**, *40*(5), 607–43.

170. Kas'yan, L. I.; Tarabara, I. N.; Kas'yan, A. O. Transformation of Oxiranes into Other Oxygen-Containing Heterocyclic Systems. **2004**, *40*(9), 1227–57.

171. Nekrasov, D. D. Synthesis and Chemical Transformations of Mono- and Disubstituted Cyanamides. **2004**, *40*(10), 1387–402.

Science

172. Townsend, D.; Lahankar, S. A.; Lee, S. K.; Chambreau, S. D.; Suits, A. G.; Zhang, X.; Rheinecker, J.; Harding, L. B.; Bowman, J. M. The Roaming Atom: Straying from the Reaction Path in Formaldehyde Decomposition. **2004**, *306*(5699), 1158–61.

173. Hernandez, J. V.; Kay, E. R.; Leigh, D. A. A Reversible Synthetic Rotary Molecular Motor. **2004**, *306*(5701), 1532–7.

174. Wu, T.; Werner, H.-J.; Manthe, U. First-Principles Theory for the $H + CH_4 \rightarrow H_2 + CH_3$ Reaction. **2004**, *306*(5705), 2227–9.

175. Wenger, O. S.; Leigh, B. S.; Villahermosa, R. M.; Gray, H. B.; Winkler, J. R. Electron Tunneling Through Organic Molecules in Frozen Glasses. **2005**, *307*(5706), 99–102.

176. Kaim, W. Chemistry: Odd Electron on Nitrogen: A Metal-Stabilized Aminyl Radical. **2005**, *307*(5707), 216–7.

177. Buettner, T.; Geier, J.; Frison, G.; Harmer, J.; Calle, C.; Schweiger, A.; Schoenberg, H.; Gruetzmacher, H. A Stable Aminyl Radical Metal Complex. **2005**, *307*(5707), 235–8.

178. Komatsu, K.; Murata, M.; Murata, Y. Encapsulation of Molecular Hydrogen in Fullerene C_{60} by Organic Synthesis. **2005**, *307*(5707), 238–40.

179. Zhao, J.; Goldman, A. S.; Hartwig, J. F. Oxidative Addition of Ammonia to Form a Stable Monomeric Amido Hydride Complex. **2005**, *307*(5712), 1080–2.

180. Bino, A.; Ardon, M.; Shirman, E. Formation of a Carbon–Carbon Triple Bond by Coupling Reactions in Aqueous Solution. **2005**, *308*(5719), 234–5.

Synlett

181. Carreno, M. C.; Urbano, A. Recent Advances in the Synthesis of Angucyclines. **2005**, (1), 1–25.

182. Rivero, M. R.; Adrio, J.; Carretero, J. C. Pauson-Khand Reactions of Alkenyl Sulfones and Alkenyl Sulfoxides: Applications in Asymmetric Synthesis. **2005**, (1), 26–41.

183. Komatsu, K.; Nishinaga, T. Synthesis and Properties of Cationic π -Conjugated Systems Stabilized by Bicyclo[2.2.2]Octene Units. **2005**, (2), 187–202.

184. Tararov, V. I.; Boerner, A. Approaching Highly Enantioselective Reductive Amination. **2005**, (2), 203–11.

185. Zezula, J.; Hudlicky, T. Recent Progress in the Synthesis of Morphine Alkaloids. **2005**, (3), 388–405.

186. Vougioukalakis, G. C.; Orfanopoulos, M. Mechanistic Studies in Triazolinedione Ene Reactions. **2005**, (5), 713–31.

187. Fallis, A. G. Adventures with Acetylenes: A Personal Odyssey from Wyerone and Crepenynic Acid to Eneidyne, Acetylenic Cyclophanes, and Propargyl Alcohols. **2004**, (13), 2249–67.

188. Bochet, C. G. Chromatic Orthogonality in Organic Synthesis. **2004**, (13), 2268–74.

189. Achari, B.; Mandal, S. B.; Dutta, P. K.; Chowdhury, C. Perspectives on 1,4-Benzodioxins, 1,4-Benzoxazines and Their 2,3-Dihydro Derivatives. **2004**, (14), 2449–67.

190. Gabriele, B.; Salerno, G.; Costa, M. PdI_2 -Catalyzed Synthesis of Heterocycles. **2004**, (14), 2468–83.

191. Braese, S.; Dahmen, S.; Hoefener, S.; Lauterwasser, F.; Kreis, M.; Ziegert, R. E. Planar and Central Chiral [2.2]Paracyclophanes as Powerful Catalysts for Asymmetric 1,2-Addition Reactions. **2004**, (15), 2647–69.

192. Pyne, S. G.; Davis, A. S.; Gates, N. J.; Hartley, J. P.; Lindsay, K. B.; Machan, T.; Tang, M. Asymmetric Synthesis of Polyfunctionalized Pyrrolidines and Related Alkaloids. **2004**, (15), 2670–80.

Synthesis—Stuttgart

193. Davies, H. M. L.; Loe, O. Intermolecular C–H Insertions of Donor/Acceptor-Substituted Rhodium Carbenoids: A Practical Solution for Catalytic Enantioselective C–H Activation. **2004**, (16), 2595–608.

194. Condon, S.; Nedelec, J.-Y. Overview on Nickel-Catalyzed Electrochemical Conjugate Addition of Organic Halides on Electron-Deficient Olefins. **2004**, (18), 3070–8.

195. Durandetti, M.; Perichon, J. Nickel-Catalyzed Electrochemical Coupling of Aryl, Heteroaryl or Vinyl Halides with Activated Alkyl Chlorides: Synthetic and Stereochemical Aspects. **2004**, (18), 3079–83.

196. Zhao, H.; Hsu, D. C.; Carlier, P. R. Memory of Chirality. An Emerging Strategy for Asymmetric Synthesis. **2005**, (1), 1–16.

197. Nevado, C.; Echavarren, A. M. Transition Metal-Catalyzed Hydroarylation of Alkynes. **2005**, (2), 167–82.

198. Kaufman, T. S. Approaches to the Total Synthesis of Calycotomine, A Widespread 1-Hydroxymethyl-Substituted Simple Tetrahydroisoquinoline. **2005**, (3), 339–60.

Tetrahedron

199. Krause, N.; Hoffmann-Roeder, A. Synthesis of Allenes with Organometallic Reagents. **2004**, *60*(51), 11671–94.

200. Yeh, V. S. C. Recent Advances in the Total Syntheses of Oxazole-Containing Natural Products. **2004**, *60*(52), 11995–2042.

201. Satake, A.; Kobuke, Y. Dynamic Supramolecular Porphyrin Systems. **2004**, *61*(1), 13–41.

202. Yu, M.; Pagenkopf, B. L. Recent Advances in Donor–Acceptor (DA) Cyclopropanes. **2005**, *61*(2), 321–47.

203. Fleming, F. F.; Zhang, Z. Cyclic Nitriles: Tactical Advantages in Synthesis. **2005**, *61*(4), 747–89.

204. Jain, N.; Kumar, A.; Chauhan, S.; Chauhan, S. M. S. Chemical and Biochemical Transformations in Ionic Liquids. **2005**, *61*(5), 1015–60.

205. He, H. S.; Chung, C. W. Y.; But, T. Y. S.; Toy, P. H. Arsonium Ylides in Organic Synthesis. **2005**, *61*(6), 1385–405.

206. Petraghani, N.; Stefani, H. A. Advances in Organic Tellurium Chemistry. **2005**, *61*(7), 1613–79.

207. Kowalski, P.; Mitka, K.; Ossowska, K.; Kolarska, Z. Oxidation of Sulfides to Sulfoxides. Part 1: Oxidation Using Halogen Derivatives. **2005**, *61*(8), 1933–53.

208. Schroeter, S.; Stock, C.; Bach, T. Regioselective Cross-Coupling Reactions of Multiple Halogenated Nitrogen-, Oxygen-, and Sulfur-Containing Heterocycles. **2005**, *61*(9), 2245–67.

209. Katritzky, A. R.; Manju, K.; Singh, S. K.; Meher, N. K. Benzotriazole Mediated Amino-, Amido-, Alkoxy- and Alkylthio-Alkylation. **2005**, *61*(10), 2555–81.

Monographs

210. Beavon, R.; Jarvis, A. Periodicity, Quantitative Equilibria and Functional Group Chemistry. Nelson: Cheltenham, U.K., 2001.

211. Bruneau, C.; Dixneuf, P. H.; Eds. Ruthenium Catalysts and Fine Chemistry. [In *Top. Organomet. Chem.*, **2004**, *11*]. Springer: Berlin, Germany, 2004.

212. Chapman, B.; Jarvis, A. Organic Chemistry, Energetics, Kinetics and Equilibrium. Nelson: Walton-on-Thames, U.K., 2000.

213. Gleiter, R.; Hopf, H.; Eds. Modern Cyclophane Chemistry. Wiley-VCH: Weinheim, Germany, 2004.

214. Gleria, M.; De Jaeger, R.; Eds. Phosphazenes: A Worldwide Insight. Nova Science Publishers: Hauppauge, NY, 2004.

215. Harmata, M.; Ed. Strategies and Tactics in Organic Synthesis, Vol. 4. Elsevier: London, U.K., 2004.

216. Hutchings, G. J.; Derouane, E. G.; Eds. Special Issue: Heterogeneous Catalysis for Selective Oxidation. [In: *J. Mol. Catal. A: Chem.*, **2004**, *220*(1)]. Elsevier: Amsterdam, The Netherlands, 2004.

217. Jackson, R. A.; Ed. Mechanisms in Organic Reactions. Royal Society of Chemistry: Cambridge, U.K., 2001.

218. Kundig, E. P.; Ed. Transition Metal Arene π -Complexes in Organic Synthesis and Catalysis. [In: *Top. Organomet. Chem.*, **2004**, *7*]. Springer: Berlin, Germany, 2004.

219. Moloney, M. G. Reaction Mechanisms at a Glance: A Stepwise Approach to Problem-Solving in Organic Chemistry. Blackwell Science: Oxford, U.K., 2000.

220. Morales, G. A.; Bunin, B. A.; Editors Combinatorial Chemistry, Part B. [In: *Methods Enzymol.*; **2003**, *369*]. Elsevier: San Diego, CA, 2003.

221. Moss, R. A.; Platz, M. S.; Jones, M., Jr.; Eds. Reactive Intermediate Chemistry. John Wiley & Sons: Hoboken, NJ, 2004.

222. Neuhaus, D.; Williamson, M. P. The Nuclear Overhauser Effect in Structural and Conformational Analysis, 2nd ed. Wiley-VCH: New York, 2000.

223. Nielsen, P. E.; Editor Pseudo-Peptides in Drug Discovery. Wiley-VCH: Weinheim, Germany, 2004.

224. Ogden, J. S. Introduction to Molecular Symmetry. Oxford University Press: Oxford, U.K., 2001.

225. Overman, L. E.; Editor Organic Reactions, Vol. 63. John Wiley & Sons: Hoboken, NJ, 2004.

226. Palmer, D. C.; Editor Oxazoles: Synthesis, Reactions and Spectroscopy. Part B. [In: *Chem. Heterocycl. Compd.*, **2004**, *60*(B)]. John Wiley & Sons: Hoboken, NJ, 2004.

227. Pandalai, S. G.; Editor Recent Developments in Carbohydrate Research, Volume 1. Transworld Research Network: Trivandrum, India, 2003.

228. Perkins, J. Radical Chemistry: The Fundamentals. Oxford University Press: Oxford, U.K., 2001.

229. Rauk, A. Orbital Interaction Theory of Organic Chemistry, 2nd ed. John Wiley & Sons: Chichester, U.K., 2000.

230. Smith, M. B.; March, J. March's Advanced Organic Chemistry: Reactions, Mechanisms, and Structure, 5th ed. John Wiley & Sons: Chichester, U.K., 2000.

231. Soriano, D.; Blair, J.; Slimick, J. Introduction to Molecular Modeling. Nova Science Publishers: Huntington, NY, 2001.

232. Storr, R. C.; Gilchrist, T. L.; Editors Houben-Weyl Methods of Molecular Transformations: Hetarenes and Related Ring Systems, Five-Membered Hetarenes with Three or More Heteroatoms. [In: *Sci. Synth.*, **2004**, *13*]. Georg Thieme Verlag: Stuttgart, Germany, 2004.

233. Vorbrueggen, H.; Ruh-Pohlenz, C. Handbook of Nucleoside Synthesis. John Wiley & Sons: Chichester, U.K., 2001.

234. Weinreb, S. M. Science of Synthesis, Houben-Weyl Methods of Molecular Transformations; Vol. 17: Hetarenes and Related Ring Systems, Six-Membered Hetarenes with Two Unlike or More than Two Heteroatoms and Fully Unsaturated Larger-Ring Heterocycles. Georg Thieme Verlag: Stuttgart, Germany, 2004.

235. Whyman, R. Applied Organometallic Chemistry and Catalysis. Oxford University Press: Oxford, U.K., 2001.

236. Yamamoto, H.; Ed. Compounds of Groups 13 and 2 (Al, Ga, In, Tl, Be...Ba). [In: *Sci. Synth.*, **2004**, *7*]. Georg Thieme Verlag: Stuttgart, Germany, 2004.

237. Yamamoto, H.; Oshima, K.; Eds. Main Group Metals in Organic Synthesis, Volume 1. Wiley-VCH: Weinheim, Germany, 2004.

238. Yamamoto, H.; Oshima, K.; Eds. Main Group Metals in Organic Synthesis, Vol. 2. Wiley-VCH: Weinheim, Germany, 2004.

239. Yamamoto, Y. Science of Synthesis, Houben-Weyl Methods of Molecular Transformations; Vol. 16: Hetarenes and Related Ring Systems, Six-Membered Hetarenes with Two Identical Heteroatoms. Georg Thieme Verlag: Stuttgart, Germany, 2004.

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