

JOC *Recent Reviews*

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compiled by Veronica M. Cornel

Department of Chemistry, Reedley College, 995 Reed 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 middle part of the 2007 literature. Previous installment: *J. Org. Chem.* **2007**, 72(20), 7809–16.

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. Maulide, N.; Vanherck, J.-C.; Gautier, A.; Marko, I. E. Mild and Neutral Deprotections Catalyzed by Cerium(IV) Ammonium Nitrate. **2007**, 40(6), 381–92.
2. Weng, Z.; Teo, S.; Hor, T. S. A. Metal Unsaturation and Ligand Hemilability in Suzuki Coupling. **2007**, 40(8), 676–84.
3. Miyata, M.; Tohnai, N.; Hisaki, I. Crystalline Host-Guest Assemblies of Steroidal and Related Molecules: Diversity, Hierarchy, and Supramolecular Chirality. **2007**, 40(8), 694–702.
4. Stevenson, C. D. Annulenylenes, Annulynes, and Annulenes. **2007**, 40(8), 703–11.
5. Waterman, R.; Hayes, P. G.; Tilley, T. D. Synthetic Development and Chemical Reactivity of Transition-Metal Silylene Complexes. **2007**, 40(8), 712–9.
6. Moakes, G.; Janata, J. Slow Solvation Dynamics of a Water–Nitrobenzene System. **2007**, 40(8), 720–8.
7. Vogel, P.; Turks, M.; Bouchez, L.; Markovic, D.; Varela-Alvarez, A.; Sordo, J. A. New Organic Chemistry of Sulfur Dioxide. **2007**, 40(10), 931–42.
8. Juaristi, E.; Cuevas, G. Manifestations of Stereoelectronic Interactions in $^1J_{C-H}$ One-Bond Coupling Constants. **2007**, 40(10), 961–70.
9. Rayabarapu, D. K.; Cheng, C.-H. New Catalytic Reactions of Oxa- and Azabicyclic Alkenes. **2007**, 40(10), 971–983.
10. Bleeke, J. R. Aromatic Iridacycles. **2007**, 40(10), 1035–47.
11. Ishihara, K.; Fushimi, M.; Akakura, M. Rational Design of Minimal Artificial Diels-Alderases Based on the Copper(II) Cation-Aromatic π Attractive Interaction. **2007**, 40(10), 1049–55.

Angewandte Chemie, International Edition in English

12. Marion, N.; Diez-Gonzalez, S.; Nolan, S. P. N-Heterocyclic Carbenes as Organocatalysts. **2007**, 46(17), 2988–3000.
13. Ohki, Y.; Fryzuk, M. D. Dinitrogen Activation by Group 4 Metal Complexes. **2007**, 46(18), 3180–3.
14. Willis, M. C. Palladium-Catalyzed Coupling of Ammonia and Hydroxide with Aryl Halides: The Direct Synthesis of Primary Anilines and Phenols. **2007**, 46(19), 3402–4.
15. Kunz, D. Synthetic Routes to N-Heterocyclic Carbene Complexes: Pyridine–Carbene Tautomerizations. **2007**, 46(19), 3405–8.
16. Fuerstner, A.; Davies, P. W. Catalytic Carbophilic Activation: Catalysis by Platinum and Gold π Acids. **2007**, 46(19), 3410–49.
17. Mihovilovic, M. D.; Stanetty, P. Metal-assisted Multi-component Reactions Involving Carbon Monoxide - Towards Heterocycle Synthesis. **2007**, 46(20), 3612–5.
18. Butenschoen, H. A New Oxocarbon $C_{12}O_6$ via Highly Strained Benzyne Intermediates. **2007**, 46(22), 4012–4.
19. Chianese, A. R.; Lee, S. J.; Gagne, M. R. Electrophilic Activation of Alkenes by Platinum(II): So Much More Than a Slow Version of Palladium(II). **2007**, 46(22), 4042–59.
20. Schreiner, P. R. Relative Energy Computations with Approximate Density Functional Theory - A Caveat! **2007**, 46(23), 4217–9.
21. Ritch, J. S.; Chivers, T. Silicon Analogues of Crown Ethers and Cryptands: A New Chapter in Host–Guest Chemistry? **2007**, 46(25), 4610–3.
22. Masson, G.; Housseman, C.; Zhu, J. The Enantioselective Morita–Baylis–Hillman Reaction and its Aza Counterpart. **2007**, 46(25), 4614–28.

23. Welzel, P. A Long Research Story Culminates in the First Total Synthesis of Moenomycin A. **2007**, *46*(26), 4825–9.

24. Herbert, D. E.; Mayer, U. F. J.; Manners, I. Strained Metallocenophanes and Related Organometallic Rings Containing π -Hydrocarbon Ligands and Transition-Metal Centers. **2007**, *46*(27), 5060–81.

25. Korth, H.-G. Carbon Radicals of Low Reactivity Against Oxygen: Radically Different Antioxidants. **2007**, *46*(28), 5274–6.

26. Cravotto, G.; Cintas, P. Forcing and Controlling Chemical Reactions with Ultrasound. **2007**, *46*(29), 5476–8.

27. Steven, A.; Overman, L. E. Total Synthesis of Complex Cyclotryptamine Alkaloids: Stereocontrolled Construction of Quaternary Carbon Stereocenters. **2007**, *46*(29), 5488–508.

28. Gademann, K.; Bonazzi, S. Total Synthesis of Complex Cyanobacterial Alkaloids Without Using Protecting Groups. **2007**, *46*(30), 5656–8.

29. Schmuck, C. Guest Encapsulation Within Self-Assembled Molecular Containers. **2007**, *46*(31), 5830–3.

30. Ludwig, R.; Kragl, U. Do We Understand the Volatility of Ionic Ligands? **2007**, *46*(35), 6582–4.

Australian Journal of Chemistry

31. Wheate, N. J. Cucurbit[n]uril: A New Molecule in Host–Guest Chemistry. **2006**, *59*(5), 354.

32. Zard, S. Z. The Genesis of the Reversible Radical Addition-Fragmentation-Transfer of Thiocarbonylthio Derivatives from the Barton-McCombie Deoxygenation: a Brief Account and Some Mechanistic Observations. **2006**, *59*(10), 663–8.

Canadian Journal of Chemistry

33. Vederas, J. C. 2005 Alfred Bader Award Lecture. Diaminopimelate and Lysine Biosynthesis - An Antimicrobial Target in Bacteria. **2006**, *84*(10), 1197–207.

34. Kuehl, O. The Natural Bite Angle - Seen From a Ligand's Point of View. **2007**, *85*(3), 230–8.

35. Zon, G. Commercialization of Automated RNA Synthesis - Twenty Years On. **2007**, *85*(4), 257–60.

Chemical Reviews

36. Lopez Ortiz, F.; Iglesias, M. J.; Fernandez, I.; Andujar Sanchez, C. M.; Ruiz Gomez, G. Nucleophilic Dearomatizing (DNAr) Reactions of Aromatic C,H-Systems. A Mature Paradigm in Organic Synthesis. **2007**, *107*(5), 1580–691.

37. Gibson, V. C.; Redshaw, C.; Solan, G. A. Bis(imino)-pyridines: Surprisingly Reactive Ligands and a Gateway to New Families of Catalysts. **2007**, *107*(5), 1745–76.

38. Arjona, O.; Gomez, A. M.; Lopez, J. C.; Plumet, J. Synthesis and Conformational and Biological Aspects of Carbasugars. **2007**, *107*(5), 1919–2036.

39. Akhrem, I.; Orlinkov, A. Polyhalomethanes Combined with Lewis Acids in Alkane Chemistry. **2007**, *107*(5), 2037–79.

40. Singh, G. S.; D'Hooghe, M.; De Kimpe, N. Synthesis and Reactivity of C-Heteroatom-Substituted Aziridines. **2007**, *107*(5), 2080–135.

41. Walsh, P. J.; Li, H.; de Parrodi, C. A. A Green Chemistry Approach to Asymmetric Catalysis: Solvent-Free and Highly Concentrated Reactions. **2007**, *107*(6), 2503–45.

42. Parvulescu, V. I.; Hardacre, C. Catalysis in Ionic Liquids. **2007**, *107*(6), 2615–65.

43. Fagnoni, M.; Dondi, D.; Ravelli, D.; Albini, A. Photocatalysis for the Formation of the C–C Bond. **2007**, *107*(6), 2725–56.

44. Kar, M.; Basak, A. Design, Synthesis, and Biological Activity of Unnatural Enediynes and Related Analogues Equipped with pH-Dependent or Phototriggering Devices. **2007**, *107*(7), 2861–90.

45. Rubin, M.; Rubina, M.; Gevorgyan, V. Transition Metal Chemistry of Cyclopropenes and Cyclopropanes. **2007**, *107*(7), 3117–79.

46. Hashmi, A. S. K. Gold-Catalyzed Organic Reactions. **2007**, *107*(7), 3180–211.

47. Sawwan, N.; Greer, A. Rather Exotic Types of Cyclic Peroxides: Heteroatom Dioxiranes. **2007**, *107*(7), 3247–85.

48. Das, S.; Chandrasekhar, S.; Yadav, J. S.; Gree, R. Recent Developments in the Synthesis of Prostaglandins and Analogues. **2007**, *107*(7), 3286–337.

49. Gelalcha, F. G. Heterocyclic Hydroperoxides in Selective Oxidations. **2007**, *107*(7), 3338–61.

50. Bifulco, G.; Dambruoso, P.; Gomez-Paloma, L.; Riccio, R. Determination of Relative Configuration in Organic Compounds by NMR Spectroscopy and Computational Methods. **2007**, *107*(9), 3744–79.

51. Marcus, Y. Gibbs Energies of Transfer of Anions from Water to Mixed Aqueous Organic Solvents. **2007**, *107*(9), 3880–97.

Chemical Society Reviews

52. Berova, N.; Di Bari, L.; Pescitelli, G. Application of Electronic Circular Dichroism in Configurational and Conformational Analysis of Organic Compounds. **2007**, *36*(6), 914–31.

53. Perez-Garcia, L.; Amabilino, D. B. Spontaneous Resolution, Whence and Whither: From Enantiomorphic Solids to Chiral Liquid Crystals, Monolayers and Macro- and Supramolecular Polymers and Assemblies. **2007**, *36*(6), 941–67.

54. Fairlamb, I. J. S. Regioselective (Site-selective) Functionalization of Unsaturated Halogenated Nitrogen, Oxygen and Sulfur Heterocycles by Pd-Catalyzed Cross-Couplings and Direct Arylation Processes. **2007**, *36*(7), 1036–45.

55. Schnuerch, M.; Spina, M.; Khan, A. F.; Mihovilovic, M. D.; Stanetty, P. Halogen Dance Reactions - A Review. **2007**, *36*(7), 1046–57.

56. Campeau, L.-C.; Fagnou, K. Applications of and Alternatives to π -Electron-Deficient Azine Organometallics in Metal Catalyzed Cross-Coupling Reactions. **2007**, *36*(7), 1058–68.

57. Campos, K. R. Direct sp^3 C–H Bond Activation Adjacent to Nitrogen in Heterocycles. **2007**, *36*(7), 1069–84.

58. Heller, B.; Hapke, M. The Fascinating Construction of Pyridine Ring Systems by Transition Metal-Catalyzed [2+2+2] Cycloaddition Reactions. **2007**, *36*(7), 1085–94.

59. D'Souza, D. M.; Mueller, T. J. J. Multi-Component Syntheses of Heterocycles by Transition-Metal Catalysis. **2007**, *36*(7), 1095–108.

60. Davies, H. M. L.; Hedley, S. J. Intermolecular Reactions of Electron-Rich Heterocycles with Copper and Rhodium Carbenoids. **2007**, *36*(7), 1109–19.

61. Song, J. J.; Reeves, J. T.; Gallou, F.; Tan, Z.; Yee, N. K.; Senanayake, C. H. Organometallic Methods for the Synthesis and Functionalization of Azaindoles. **2007**, *36*(7), 1120–32.

62. Nishiyama, H. Synthesis and Use of Bisoxazoliny-Phenyl Pincers. **2007**, *36*(7), 1133–41.

63. Minatti, A.; Muniz, K. Intramolecular Aminopalladation of Alkenes as a Key Step to Pyrrolidines and Related Heterocycles. **2007**, *36*(7), 1142–52.

64. Chemler, S. R.; Fuller, P. H. Heterocycle Synthesis by Copper Facilitated Addition of Heteroatoms to Alkenes, Alkynes and Arenes. **2007**, *36*(7), 1153–60.

65. Schlosser, M.; Mongin, F. Pyridine Elaboration through Organometallic Intermediates: Regiochemical Control and Completeness. **2007**, *36*(7), 1161–72.

66. Seregin, I. V.; Gevorgyan, V. Direct Transition Metal-Catalyzed Functionalization of Heteroaromatic Compounds. **2007**, *36*(7), 1173–1193.

67. Wilson, R. M.; Danishefsky, S. J. Applications of Total Synthesis Toward the Discovery of Clinically Useful Anticancer Agents. **2007**, *36*(8), 1207–26.

68. Bennett, C. S.; Wong, C.-H. Chemoenzymatic Approaches to Glycoprotein Synthesis. **2007**, *36*(8), 1227–38.

69. Georgiev, I. G.; MacGillivray, L. R. Metal-Mediated Reactivity in the Organic Solid State: From Self-Assembled Complexes to Metal-Organic Frameworks. **2007**, *36*(8), 1239–48.

70. Moses, J. E.; Moorhouse, A. D. The Growing Applications of Click Chemistry. **2007**, *36*(8), 1249–62.

71. Gazit, E. Self-Assembled Peptide Nanostructures: The Design of Molecular Building Blocks and Their Technological Utilization. **2007**, *36*(8), 1263–9.

72. Gomez, R.; Seoane, C.; Segura, J. L. The First Two Decades of a Versatile Electron Acceptor Building Block: 11-, 11,12,12-Tetracyano-9,10-Anthraquinodimethane (TCAQ). **2007**, *36*(8), 1305–22.

73. Wang, C.; Xi, Z. Co-operative Effect of Lewis Acids with Transition Metals for Organic Synthesis. **2007**, *36*(9), 1395–406.

74. Severin, R.; Doye, S. The Catalytic Hydroamination of Alkynes. **2007**, *36*(9), 1407–20.

75. Fisk, J. S.; Mosey, R. A.; Tepe, J. J. The Diverse Chemistry of Oxazol-5-(4H)-ones. **2007**, *36*(9), 1432–40.

Chemistry—A European Journal

76. Macias-Ruvalcaba, N. A.; Evans, D. H. Electron Transfer and Structural Change: Distinguishing Concerted and Two-Step Processes. **2007**, *13*(16), 4386–95.

77. Brik, A.; Wong, C.-H. Sugar-assisted Ligation for the Synthesis of Glycopeptides. **2007**, *13*(20), 5670–5.

78. Westerhausen, M.; Gaertner, M.; Fischer, R.; Langer, J.; Yu, L.; Reiher, M. Heavy Grignard Reagents: Challenges and Possibilities of Aryl Alkaline Earth Metal Compounds. **2007**, *13*(22), 6292–306.

79. Yudin, A. K.; Hili, R. Overcoming the Demons of Protecting Groups with Amphoteric Molecules. **2007**, *13*(23), 6538–42.

80. Opsitnick, E.; Lee, D. Two-Dimensional Electronic Conjugation: Statics and Dynamics at Structural Domains Beyond Molecular Wires. **2007**, *13*(25), 7040–9.

CHEMTRACTS: Organic Chemistry

81. Paquette, L. A. Synthesis and Unprecedented Reactivity Characteristics of Unsaturated Bridgehead Sultams. **2006**, *19*(1), 1–10.

82. Lang, S. Efficient Two-Pot Procedure for the Preparation of Anilines from Readily Available Aldehydes. **2006**, *19*(1), 17–22.

83. Kellogg, R. M. Multicomponent Reactions with Ketene Imine Intermediates Formed from the Reaction of Sulfonyl Azides with Acetylenes. **2006**, *19*(1), 31–7.

84. Behera, M. Recent Asymmetric Synthesis of the Anti-Influenza Neuraminidase Inhibitor Oseltamivir (Tamiflu). **2006**, *19*(1), 38–44.

85. Sieck, S. R.; Hanson, P. R. Ring-Closing Metathesis of Sterically and Electronically Demanding Systems. **2006**, *19*(7), 280–94.

Coordination Chemistry Reviews

86. Anzenbacher, P.; Nishiyabu, R.; Palacios, M. A. N-Confused Calix[4]pyrroles. **2006**, *250*(23+24), 2929–38.

87. Yamaguchi, Y.; Ding, W.; Sanderson, C. T.; Borden, M. L.; Morgan, M. J.; Kutal, C. Electronic Structure, Spectroscopy, and Photochemistry of Group 8 Metallocenes. **2007**, *251*(3+4), 515–24.

88. Arnold, P. L.; Pearson, S. Abnormal N-Heterocyclic Carbenes. **2007**, *251*(5+6), 596–609.

89. Pugh, D.; Danopoulos, A. A. Metal Complexes with ‘Pincer’-type Ligands Incorporating N-Heterocyclic Carbene Functionalities. **2007**, *251*(5+6), 610–41.

90. Lin, I. J. B.; Vasam, C. S. Preparation and Application of N-Heterocyclic Carbene Complexes of Ag(I). **2007**, *251*(5+6), 642–70.

91. Colacino, E.; Martinez, J.; Lamaty, F. Preparation of NHC-Ruthenium Complexes and Their Catalytic Activity in Metathesis Reaction. **2007**, *251*(5+6), 726–64.

92. Esteruelas, M. A.; Lopez, A. M.; Oliván, M. Osmium-Carbon Double Bonds: Formation and Reactions. **2007**, *251*(5+6), 795–840.

93. Mata, J. A.; Poyatos, M.; Peris, E. Structural and Catalytic Properties of Chelating Bis- and Tris-N-Heterocyclic Carbenes. **2007**, *251*(5+6), 841–59.

94. Diez-Gonzalez, S.; Nolan, S. P. Stereoelectronic Parameters Associated with N-Heterocyclic Carbene (NHC) Ligands: A Quest for Understanding. **2007**, *251*(5+6), 874–83.

95. Ellis, B. D.; Macdonald, C. L. B. Stable Compounds Containing Heavier Group 15 Elements in the +1 Oxidation State. **2007**, *251*(7+8), 936–73.

96. Herndon, J. W. The Chemistry of the Carbon-Transition Metal Double and Triple Bond: Annual Survey Covering the Year 2005. **2007**, *251*(9+10), 1158–258.

97. Sivaramakrishna, A.; Clayton, H. S.; Kaschula, C.; Moss, J. R. Transition Metal-Alkenyl Complexes $[M-(CH_2)_nCH=CH_2, n \geq 2]$: Synthesis, Structure, Reactivity and Applications. **2007**, *251*(9+10), 1294–308.

Current Organic Chemistry

98. Szilagyi, L.; Varela, O. Non-Conventional Glycosidic Linkages: Syntheses and Structures of Thiooligosaccharides and Carbohydrates with Three-Bond Glycosidic Connections. **2006**, *10*(14), 1745–70.

99. Drabowicz, J.; Kudelska, W.; Lopusinski, A.; Zajac, A. The Chemistry of Phosphinic and Phosphinous Acid Derivatives Containing t-Butyl Group as a Single Bulky Substituent: Synthetic, Mechanistic and Stereochemical Aspects. **2007**, *11*(1), 3–15.

100. Sasaki, S.; Yoshifuji, M. Synthesis, Structure and Properties of Crowded Triarylphosphines. **2007**, *11*(1), 17–31.

101. Bansal, R. K.; Gupta, N.; Kumawat, S. K. Recent Advances in the Chemistry of Anellated Azaphospholes. **2007**, *11*(1), 33–47.

102. Zablocka, M.; Majoral, J.-P. Synthesis of Phosphorus Ligands from Zirconium Reagents. A Useful Approach. **2007**, *11*(1), 49–60.

103. Holz, J.; Gensow, M. N.; Zayas, O.; Boerner, A. Synthesis of Chiral Heterocyclic Phosphines for Application in Asymmetric Catalysis. **2007**, *11*(1), 61–106.

104. Keglevich, G.; Baan, Z.; Hermecz, I.; Novak, T.; Odinet, I. L. The Phosphorus Aspects of Green Chemistry: The Use of Quaternary Phosphonium Salts and 1,3-Dialkylimidazolium Hexafluorophosphates in Organic Synthesis. **2007**, *11*(1), 107–26.

105. Ferreira, V. F. Synthesis of Heterocyclic Compounds by Carbenoid Transfer Reactions. **2007**, *11*(2), 177–93.

106. Musilek, K.; Kuca, K.; Jun, D.; Dolezal, M. Progress in Synthesis of New Acetylcholinesterase Reactivators During the Period 1990–2004. **2007**, *11*(2), 229–38.

107. Wang, X.; Liang, M.; Zhang, J.; Wang, Y. Selective Hydrogenation of Aromatic Chloronitro Compounds. **2007**, *11*(3), 299–314.

108. Toth, G. K.; Kele, Z.; Varadi, G. Phosphopeptides - Chemical Synthesis, Analysis, Outlook and Limitations. **2007**, *11*(5), 409–26.

109. Feske, B. D. Bestatin: Three Decades of Synthetic Strategies. **2007**, *11*(5), 483–96.

110. Perdih, A.; Dolenc, M. S. Recent Advances in the Synthesis of Unnatural α -Amino Acids. **2007**, *11*(9), 801–32.

111. Madkour, H. M. F.; Elgazwy, A. S. H. Utilities of Some Carbon Nucleophiles in Heterocyclic Synthesis. **2007**, *11*(10), 853–908.

112. Pastor, I. M.; Yus, M. The Prins Reaction: Advances and Applications. **2007**, *11*(10), 925–57.

113. Chaturvedi, D.; Ray, S. Versatile Use of Carbon Dioxide in Synthesis of Organic Carbamates. **2007**, *11*(11), 987–98.

Current Organic Synthesis

114. Murphy, P. V.; Dunne, J. L. Syntheses of Peptidomimetics Based on Pyranose and Poly-Hydroxylated Piperidine Scaffolds. **2006**, *3*(4), 403–37.

115. Koketsu, M.; Ishihara, H. Synthesis and Applications of Chalcogenoamide: Thio-, Seleno- and Telluroamides. **2007**, *4*(1), 15–29.

116. Honaker, M. T.; Hovland, J. M.; Salvatore, R. N. The Synthesis of Tertiary and Secondary Phosphines and Their Applications in Organic Synthesis. **2007**, *4*(1), 31–45.

117. Zappia, G.; Gacs-Baitz, E.; Delle Monache, G.; Misiti, D.; Nevola, L.; Botta, B. Oxazolidin-2-one Ring, A Popular Framework in Synthetic Organic Chemistry: Part I. The Construction of the Oxazolidin-2-One Ring. **2007**, *4*(1), 81–135.

118. Hua, R.; Jiang, J.-L. Recent Development of Rhenium-Catalyzed Organic Synthesis. **2007**, *4*(2), 151–74.

119. Patil, S.; Patil, R. Synthesis and Functionalization of Indoles Through Rhodium-Catalyzed Reactions. **2007**, *4*(2), 201–22.

120. Chaturvedi, D.; Mishra, N.; Mishra, V. Various Approaches for the Synthesis of Organic Carbamates. **2007**, *4*(3), 308–20.

121. Demir, A. S.; Emrullahoglu, M. Manganese(III) Acetate: A Versatile Reagent in Organic Chemistry. **2007**, *4*(3), 321–51.

European Journal of Organic Chemistry

122. Bartoli, G.; Locatelli, M.; Melchiorre, P.; Sambri, L. Taking up the Cudgels for Perchlorates: Uses and Applications in Organic Reactions Under Mild Conditions. **2007**, (13), 2037–49.

123. Langer, P. Synthesis of Bridged and Nonbridged N-Heterocycles by Cyclocondensation of Bis(Silyl Enol Ethers) with Iminium Salts. **2007**, (14), 2233–8.

124. Kirschning, A.; Kujat, C.; Luiken, S.; Schaumann, E. Small and Versatile - Formyl Anion and Dianion Equivalents. **2007**, (15), 2387–400.

125. Palomo, C.; Oiarbide, M.; Laso, A. Recent Advances in the Catalytic Asymmetric Nitroaldol (Henry) Reaction. **2007**, (16), 2561–74.

126. de Figueiredo, R. M.; Christmann, M. Organocatalytic Synthesis of Drugs and Bioactive Natural Products. **2007**, (16), 2575–600.

127. Li, G.; Saibau Kotti, S. R. S.; Timmons, C. Recent Development of Regio- and Stereoselective Aminohalogenation Reaction of Alkenes. **2007**, (17), 2745–58.

128. Shi, Y.-L.; Shi, M. Aza-Baylis–Hillman Reactions and Their Synthetic Applications. **2007**, (18), 2905–16.

129. Muzart, J. Procedures For and Possible Mechanisms of Pd-Catalyzed Allylations of Primary and Secondary Amines with Allylic Alcohols. **2007**, (19), 3077–89.

130. Beletskaya, I. P.; Ananikov, V. P. Unusual Influence of the Structures of Transition Metal Complexes on Catalytic C-S and C-Se Bond Formation Under Homogeneous and Heterogeneous Conditions. **2007**, (21), 3431–44.

131. Zanoni, G.; Pontiroli, A.; Marchetti, A.; Vidari, G. Stereoselective Carbonyl Allylation by Umpolung of Allylpalladium(II) Complexes. **2007**, (22), 3599–611.

Heterocycles

132. Tverdokhlebov, A. V. Pyrrolo[2,1-b]thiazoles. **2007**, *71*(4), 761–98.

133. Majhi, T. P.; Achari, B.; Chattopadhyay, P. Advances in the Synthesis and Biological Perspectives of Benzannulated Medium Ring Heterocycles. **2007**, *71*(5), 1011–52.

134. Jain, V. K.; Mandalia, H. C. The Chemistry of Calixpyrroles. **2007**, *71*(6), 1261–314.

135. Sliwa, W.; Peszke, J. Inclusion Complexes Containing Quaternary Azaaromatic Moieties. **2007**, *71*(8), 1685–713.

136. Itskson, N. A.; Geide, I. V.; Morzherin, Y. Y.; Matern, A. I.; Chupakhin, O. N. Heteroditopic Receptors. **2007**, *72*, 53–77.

Journal of Organometallic Chemistry

137. Omae, I. Three Types of Reactions with Intramolecular Five-Membered Ring Compounds in Organic Synthesis. **2007**, *692*(13), 2608–32.

138. Klingebiel, U.; Matthes, C. From Lithium Halosilylamide to Small and Large Ring Compounds, Iminosilenes and Iminosilanes. **2007**, *692*(13), 2633–41.

139. Chivers, T.; Konu, J.; Ritch, J. S.; Copsey, M. C.; Eisler, D. J.; Tuononen, H. M. New Tellurium-Containing Ring Systems. **2007**, *692*(13), 2658–68.

New Journal of Chemistry

140. Balcells, D.; Maseras, F. Computational Approaches to Asymmetric Synthesis. **2007**, *31*(3), 333–43.

141. Mancin, F.; Tecilla, P. Zinc(II) Complexes as Hydrolytic Catalysts of Phosphate Diester Cleavage: From Model Substrates to Nucleic Acids. **2007**, *31*(6), 800–17.

142. Hahn, U.; Cardinali, F.; Nierengarten, J.-F. Supramolecular Chemistry for the Self-assembly of Fullerene-Rich Dendrimers. **2007**, *31*(7), 1128–38.

143. Andres, R.; De Jesus, E.; Flores, J. C. Catalysts Based on Palladium Dendrimers. **2007**, *31*(7), 1161–91.

Organic Preparations and Procedures International

144. Pace, A.; Buscemi, S.; Vivona, N. The Synthesis of Fluorinated Heteroaromatic Compounds. Part 2. Five-Membered Rings with Two Heteroatoms. A Review. **2006**, *39*(1), 1–70.

145. Paryzek, Z.; Skiera, I. Synthesis and Cleavage of Lactones and Thiolactones. Applications in Organic Synthesis. A Review. **2007**, *39*(3), 203–96.

146. Gallou, I. Unsymmetrical Ureas. Synthetic Methodologies and Application in Drug Design. **2007**, *39*(4), 355–83.

Organometallics

147. Balazs, G.; Gregoriades, L. J.; Scheer, M. Triple Bonds between Transition Metals and the Heavier Elements of Groups 14 and 15. **2007**, *26*(13), 3058–75.

148. Power, P. P. Bonding and Reactivity of Heavier Group 14 Element Alkyne Analogues. **2007**, *26*(18), 4362–72.

149. Gleiter, R.; Bleiholder, C.; Rominger, F. α -Metalloacylmethyl cation Ions and Isoelectronic Fulvene Complexes of d6 to d9 Metals. Structural Considerations. **2007**, *26*(20), 4850–9.

Pure and Applied Chemistry

150. Moss, R. A.; Tian, J.; Chu, G.; Sauers, R. R.; Krogh-Jespersen, K. New Mechanisms Centered on Reactive Intermediates: Examples from Diazirine and Carbene Chemistry. **2007**, *79*(6), 993–1001.

151. Beletskaya, I. P.; Ananikov, V. P. Addition Reactions of E-E and E-H Bonds to Triple Bond of Alkynes Catalyzed by Pd, Pt, and Ni Complexes (E = S, Se). **2007**, *79*(6), 1041–56.

152. Chmielewski, M. J.; Zielinski, T.; Jurczak, J. Synthesis, Structure, and Complexing Properties of Macrocyclic Receptors for Anions. **2007**, *79*(6), 1087–96.

153. Paz, F. A. A.; Klinowski, J. Designing Novel Organic–Inorganic Frameworks. **2007**, *79*(6), 1097–110.

154. Garcia-Rio, L.; Leis, J. R.; Mejuto, J. C.; Perez-Lorenzo, M. Microemulsions as Microreactors in Physical Organic Chemistry. **2007**, *79*(6), 1111–23.

155. Kost, D.; Gostevskii, B.; Kalikhman, I. Silicon Rehybridization and Molecular Rearrangements in Hypercoordinate Silicon Dichelates. **2007**, *79*(6), 1125–34.

156. El Seoud, O. A. Solvation in Pure and Mixed Solvents: Some Recent Developments. **2007**, *79*(6), 1135–51.

Russian Chemical Reviews

157. Konstantinova, L. S.; Amelichev, S. A.; Rakitin, O. A. 1,2,3,4,5-Pentathiepins and 1,2,3,4,5-Pentathiepanes. **2007**, *76*(3), 195–211.

158. Samsoniya, S. A.; Trapaidze, M. V. The Chemistry of Indoloindoles. **2007**, *76*(4), 313–26.

159. Nifant'ev, E. E.; Slit'kov, P. V.; Rasadkina, E. N. Synthesis of Arylenephosphamacrocycles Using Tri- and Pentavalent Phosphorus Compounds. **2007**, *76*(4), 327–38.

160. Bagryansky, V. A.; Borovkov, V. I.; Molin, Y. N. Quantum Beats in Radical Pairs. **2007**, *76*(6), 493–506.

Science

161. Koshino, M.; Tanaka, T.; Solin, N.; Suenaga, K.; Isobe, H.; Nakamura, E. Imaging of Single Organic Molecules in Motion. **2007**, *316*(5826), 853.

162. Stuart, D. R.; Fagnou, K. The Catalytic Cross-Coupling of Unactivated Arenes. **2007**, *316*(5828), 1172–5.

163. Yan, S.; Wu, Y.-T.; Zhang, B.; Yue, X.-F.; Liu, K. Do Vibrational Excitations of CHD₃ Preferentially Promote Reactivity Toward the Chlorine Atom? **2007**, *316*(5832), 1723–6.

164. Sabbah, H.; Biennier, L.; Sims, I. R.; Georgievskii, Y.; Klippenstein, S. J.; Smith, I. W. M. Understanding Reactivity at Very Low Temperatures: The Reactions of Oxygen Atoms with Alkenes. **2007**, *317*(5834), 102–5.

165. Melnick, J. G.; Parkin, G. Cleaving Mercury–Alkyl Bonds: A Functional Model for Mercury Detoxification by MerB. **2007**, *317*(5835), 225–7.

166. Iwasawa, T.; Hooley, R. J.; Rebek, J., Jr. Stabilization of Labile Carbonyl Addition Intermediates by a Synthetic Receptor. **2007**, *317*(5837), 493–6.

167. Hamilton, G. L.; Kang, E. J.; Mba, M.; Toste, F. D. A Powerful Chiral Counterion Strategy for Asymmetric Transition Metal Catalysis. **2007**, *317*(5837), 496–9.

Synlett

168. Suzuki, T.; Ohta, E.; Kawai, H.; Fujiwara, K.; Fukushima, T. Dynamic Redox Systems as Electrochromic Materials: Bistability and Advanced Response. **2007**, (6), 851–69.

169. Meggers, E.; Atilla-Gokcumen, G. E.; Bregman, H.; Maksimoska, J.; Mulcahy, S. P.; Pagano, N.; Williams, D. S. Exploring Chemical Space with Organometallics: Ruthenium Complexes as Protein Kinase Inhibitors. **2007**, (8), 1177–89.

170. Somfai, P.; Panknin, O. Investigations of the [2,3]-Sigmatropic Rearrangements of Vinylaziridines and Allylic Amines. **2007**, (8), 1190–202.

171. Hu, Q.-S. Controlling Competing Pathways in Palladium-Catalyzed Tandem/Domino Reactions of Hindered Grignard Reagents with 1,2-Dihaloarenes and 2-Haloaryl Tosylates. **2007**, (9), 1331–45.

172. Bertus, P.; Szymoniak, J. Titanium-Mediated Synthesis of Primary Cyclopropylamines from Nitriles and Grignard Reagents. **2007**, (9), 1346–56.

173. Walji, A. M.; MacMillan, D. W. C. Strategies to Bypass the Taxol Problem. Enantioselective Cascade Catalysis, A New Approach for the Efficient Construction of Molecular Complexity. **2007**, (10), 1477–89.

174. Woodward, S. Design Versus Discovery in Synthetic Applications of Organoalanes. **2007**, (10), 1490–500.

175. Oestreich, M. Silicon-Stereogenic Silanes in Asymmetric Catalysis. **2007**, (11), 1629–43.

176. Hall, D. G. Lewis and Bronsted Acid Catalyzed Allylboration of Carbonyl Compounds: from Discovery to Mechanism and Applications. **2007**, (11), 1644–55.

177. Rajca, A.; Rajca, S.; Pink, M.; Miyasaka, M. Annelated, Chiral π -Conjugated Systems: Tetraphenylenes and Helical β -Oligothiophenes. **2007**, (12), 1799–822.

178. Tanaka, K. Cationic Rhodium(I)/BINAP-Type Bisphosphine Complexes: Versatile New Catalysts for Highly Chemo-, Regio-, and Enantioselective [2+2+2] Cycloadditions. **2007**, (13), 1977–93.

179. Patil, N. T.; Yamamoto, Y. Palladium-Catalyzed Cascade Reactions of Highly Activated Olefins. **2007**, (13), 1994–2005.

Synthesis—Stuttgart

180. Gil, M. V.; Arevalo, M. J.; Lopez, O. Click Chemistry - What's in a Name? Triazole Synthesis and Beyond. **2007**, (11), 1589–620.

181. Auge, J.; Lubin-Germain, N.; Uziel, J. Recent Advances in Indium-Promoted Organic Reactions. **2007**, (12), 1739–64.

182. Hemeon, I.; Bennet, A. J. Sialic Acid and Structural Analogues: Stereoselective Syntheses. **2007**, (13), 1899–926.

Tetrahedron

183. Bellina, F.; Cauteruccio, S.; Rossi, R. Synthesis and Biological Activity of Vicinal Diaryl-Substituted 1H-Imidazoles. **2007**, 63(22), 4571–624.

184. Hartley, R. C.; Li, J.; Main, C. A.; McKiernan, G. J. Titanium Carbenoid Reagents for Converting Carbonyl Groups into Alkenes. **2007**, 63(23), 4825–64.

185. Lepore, S. D.; Mondal, D. Recent Advances in Heterolytic Nucleofugal Leaving Groups. **2007**, 63(24), 5103–22.

186. Padwa, A.; Bur, S. K. The Domino Way to Heterocycles. **2007**, 63(25), 5341–78.

187. Lenardao, E. J.; Botteselle, G. V.; De Azambuja, F.; Perin, G.; Jacob, R. G. Citronellal as Key Compound in Organic Synthesis. **2007**, 63(29), 6671–712.

188. Polshettiwar, V.; Molnar, A. Silica-supported Pd Catalysts for Heck Coupling Reactions. **2007**, 63(30), 6949–76.

189. Muzart, J. Aldehydes from Pd-Catalyzed Oxidation of Terminal Olefins. **2007**, 63(32), 7505–21.

190. Druzhinin, S. V.; Balenkova, E. S.; Nenajdenko, V. G. Recent Advances in the Chemistry of α,β -Unsaturated Trifluoromethylketones. **2007**, 63(33), 7753–808.

191. Wagner, F. F.; Comins, D. L. Recent Advances in the Synthesis of Nicotine and its Derivatives. **2007**, 63(34), 8065–82.

192. Yamamoto, H. New Reaction and New Catalyst - A Personal Perspective. **2007**, 63(35), 8377–412.

193. Popowycz, F.; Merour, J.-Y.; Joseph, B. Synthesis and Reactivity of 4-, 5- and 6-Azaindoles. **2007**, 63(36), 8689–707.

194. Taylor, C. M.; Wang, W. Histidinoalanine: A Crosslinking Amino Acid. **2007**, 63(37), 9033–47.

Topics in Current Chemistry

195. Wannberg, J.; Ersmark, K.; Larhed, M. Microwave-Accelerated Synthesis of Protease Inhibitors. **2006**, 266(Microwave Methods in Organic Synthesis), 167–98.

196. Haase, C.; Seitz, O. Chemical Synthesis of Glycopeptides. **2007**, 267(Glycopeptides and Glycoproteins), 1–36.

197. Thayer, D. A.; Wong, C.-H. Enzymatic Synthesis of Glycopeptides and Glycoproteins. **2007**, 267, 37–63.

198. Meyer, B.; Moeller, H. Conformation of Glycopeptides and Glycoproteins. **2007**, 267, 187–251.

199. Fischer, D.; Geyer, A. NMR Analysis of Bioprotective Sugars: Sucrose and Oligomeric (1 \rightarrow 2)- α -D-Glucopyranosyl-(1 \rightarrow 2)- β -D-Fructofuranosides. **2007**, 272(Bioactive Conformation I), 169–85.

200. Bur, S. K. 1,3-Sulfur Shifts: Mechanism and Synthetic Utility. **2007**, 274(Characterization I), 125–71.

201. Reggelin, M. [2,3]-Sigmatropic Rearrangements of Allylic Sulfur Compounds. **2007**, 275(Sulfur-Mediated Rearrangements II), 1–65.

202. Braverman, S.; Cherkinsky, M. [2,3]Sigmatropic Rearrangements of Propargylic and Allenic Systems. **2007**, 275, 67–101.

203. Fernandez de la Pradilla, R.; Tortosa, M.; Viso, A. Sulfur Participation in [3,3]-Sigmatropic Rearrangements. **2007**, 275, 103–29.

204. Zonta, C.; De Lucchi, O.; Volpicelli, R.; Cotarca, L. Thione-Thiol Rearrangement: Miyazaki-Newman-Kwart Rearrangement and Others. **2007**, 275, 131–61.

205. Plesniak, K.; Zarecki, A.; Wicha, J. The Smiles Rearrangement and the Julia–Kocienski Olefination Reaction. **2007**, 275, 163–250.

206. Kuhn, L. T.; Bargon, J. Transfer of Parahydrogen-Induced Hyperpolarization to Heteronuclei. **2007**, 276(In Situ NMR Methods in Catalysis), 25–68.

207. Greiner, L.; Laue, S.; Woeltinger, J.; Liese, A. Continuous Asymmetric Hydrogenation. **2007**, 276, 111–24.

208. Kuhn, L. T.; Bargon, J. Exploiting Nuclear Spin Polarization to Investigate Free Radical Reactions via in situ NMR. **2007**, 276, 125–54.

Monographs

209. Allen, D. W., Tebby, J. C., Eds. Specialist Periodical Reports. [In: *Organophosphorus Chem.*, **2007**; 36]. Royal Society of Chemistry: Cambridge, U.K., 2007.

210. Arnold, S. V., Ed. Chemical Physics Research Trends. Nova Science: Hauppauge, NY, 2007.

211. Bachrach, S. M. Computational Organic Chemistry. John Wiley & Sons: Hoboken, NJ, 2007.

212. Davies, J. S. Amino Acids, Peptides and Proteins, Vol. 35. Royal Society of Chemistry: Cambridge, U.K., 2006.

213. Denisov, E. T., Afanas'ev, I. B., Eds. Oxidation and Antioxidants in Organic Chemistry and Biology. CRC Press: Boca Raton, Florida, 2005.

214. Fassina, G., Miertus, S., Eds. Combinatorial Chemistry and Technologies: Methods and Applications, Second Edition. CRC Press: Boca Raton, Florida, 2005.

215. Hall, D. G., Ed. Boronic Acids: Preparation and Applications in Organic Synthesis and Medicine. Wiley-VCH: Weinheim, Germany, 2005.

216. Kurti, L., Czako, B., Eds. Strategic Applications of Named Reactions in Organic Synthesis. Academic Press: Burlington, MA, 2005.

217. Laali, K. K., Ed. Recent Developments in Carbocation and Onium Ion Chemistry. American Chemical Society: Washington, DC, 2007.

- 218.** Landgrebe, J. A., Ed. *Theory and Practice in the Organic Laboratory: With Microscale and Standard Scale Experiments*; 5th Edition. Thomson/Wadsworth: Belmont, CA, 2005.
- 219.** Li, J. J., Ed. *Name Reactions for Functional Group Transformations*. John Wiley: Hoboken, NJ, 2007.
- 220.** Lindstrom, U. M., Ed. *Organic Reactions in Water: Principles, Strategies and Applications*. Blackwell Publishing: Oxford, U.K., 2007.
- 221.** Meyer, F., Limberg, C., Eds. *Organometallic Oxidation Catalysis*. [In: *Top. Organomet. Chem.*, **2007**; 22]. Springer: Berlin, Germany, 2007.
- 222.** Mikami, K., Lautens, M., Eds. *New Frontiers in Asymmetric Catalysis*. John Wiley & Sons: Hoboken, NJ, 2007.
- 223.** Mueller, T. J. J., Bunz, U. H. F., Eds. *Functional Organic Materials: Syntheses, Strategies and Applications*. Wiley-VCH: Weinheim, Germany, 2007.
- 224.** Nikolaev, A. V., Backinowsky, L., Defaye, J., Eds. *Special Issue: Synthesis and Structure of Glycans*. [In: *Carbohydr. Res.*, **2007**; 342(3-4)]. Elsevier: Amsterdam, Netherlands, 2007.
- 225.** Overman, L. E., Ed. *Organic Reactions*, Vol. 68. John Wiley & Sons, Inc., Hoboken, NJ, 2007.
- 226.** Pirrung, M. C., Ed. *The Synthetic Organic Chemists' Companion*. John Wiley & Sons: Hoboken, NJ, 2007.
- 227.** Richard, J. P., Ed. *Advances in Physical Organic Chemistry*, Vol. 41. Elsevier: San Diego, CA, 2006.
- 228.** Sherma, J., Fried, B., Eds. *Special Issue: Thin Layer Chromatography*. [In: *J. Liq. Chromatogr. Relat. Technol.*, **2007**; 30(15)]. Taylor & Francis: Philadelphia, PA, 2007.
- 229.** Sykstra, C., Thakkar, A. J., Eds. *Special Issue: Computational Organic Chemistry*. [In: *THEOCHEM*, **2007**; 811(1-3)]. Elsevier: Amsterdam, Netherlands, 2007.
- 230.** Toniolo, C., Bruckner, H., Eds. *Topical Issue Peptidobiotics*. [In: *Chem. Biodiversity*, **2007**; 4(6)]. Helvetica Chimica Acta: Zurich, Germany, 2007.
- 231.** Tundo, P., Perosa, A., Zecchini, F., Eds. *Methods and Reagents for Green Chemistry*. John Wiley & Sons: Hoboken, NJ, 2007.
- 232.** Warriner, S. L., Ed. *Sciences of Synthesis. Compounds with Two Carbon - Heteratom Bonds*. Georg Thieme Verlag: Stuttgart, Germany, 2007.
- 233.** Wipf, P., Ed. *Handbook of Reagents for Organic Synthesis: Reagents for High-Throughput Solid-Phase and Solution-Phase Organic Synthesis*. John Wiley & Sons: Chichester, U.K., 2005.
- 234.** Yudin, A., Ed. *Aziridines and Epoxides in Organic Synthesis*. Wiley-VCH: Weinheim, Germany, 2006.
- 235.** Zaikov, G. E., Kozlov, G. V., Makitra, R. G., Eds. *Theoretical and Practical Guide to Organic Physical Chemistry*. Nova Science: Hauppauge, NY, 2006.
- 236.** Zaikov, G. E., Rakovsky, S. K., Schiraldi, D. A., Eds. *Diversity in Chemical Reactions: Pure and Applied Chemistry*. Nova Science: Hauppauge, NY, 2006.

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