

# JOC Recent Reviews

## Number 88

compiled by Veronica M. Cornel

Department of Chemistry, Reedley College, 995 Reed Avenue, Reedley, California 93654

vmcornel@scccd.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 latter part of the 2007 literature. Previous installment: *J. Org. Chem.* **2008**, 73(1), 346–54.

**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. Prakash, G. K. S.; Hu, J. Selective Fluoroalkylations with Fluorinated Sulfones, Sulfoxides, and Sulfides. **2007**, 40(10), 921–30.
2. Marciniec, B. Catalytic Coupling of sp<sup>2</sup>- and sp-Hybridized Carbon-Hydrogen Bonds with Vinylmetaloid Compounds. **2007**, 40(10), 943–52.
3. Wang, Y.; Jiang, W.; Yan, T.; Voth, G. A. Understanding Ionic Liquids through Atomistic and Coarse-Grained Molecular Dynamics Simulations. **2007**, 40(11), 1193–9.
4. Klosin, J.; Landis, C. R. Ligands for Practical Rhodium-Catalyzed Asymmetric Hydroformylation. **2007**, 40(12), 1251–9.
5. Zhang, W.; Chi, Y.; Zhang, X. Developing Chiral Ligands for Asymmetric Hydrogenation. **2007**, 40(12), 1278–90.
6. Saudan, L. A. Hydrogenation Processes in the Synthesis of Perfumery Ingredients. **2007**, 40(12), 1309–19.
7. Zhou, Y.-G. Asymmetric Hydrogenation of Heteroaromatic Compounds. **2007**, 40(12), 1357–66.
8. Federsel, H.-J.; Hedberg, M.; Qvarnstroem, F. R.; Sjoegren, M. P. T.; Tian, W. Construction of a Chiral Central Nervous System (CNS)-Active Aminotetralin Drug Compound Based on a Synthesis Strategy Using Multitasking Properties of (S)-1-Phenylethylamine. **2007**, 40(12), 1377–84.
9. Skucas, E.; Ngai, M.-Y.; Komanduri, V.; Krische, M. J. Enantiomerically Enriched Allylic Alcohols and Allylic Amines via C–C Bond-Forming Hydrogenation: Asymmetric Carbonyl and Imine Vinylation. **2007**, 40(12), 1394–401.
10. Roseblade, S. J.; Pfaltz, A. Iridium-Catalyzed Asymmetric Hydrogenation of Olefins. **2007**, 40(12), 1402–11.
11. Ferber, B.; Kagan, H. B. Metallocene Sulfoxides as Precursors of Metallocenes with Planar Chirality. **2007**, 349(4 + 5), 493–507.
12. Gibson, S. E.; Rudd, M. The Role of Secondary Interactions in the Asymmetric Palladium-Catalyzed Hydrosilylation of Olefins with Monophosphine Ligands. **2007**, 349(6), 781–95.
13. Hamid, M. H. S. A.; Slatford, P. A.; Williams, J. M. J. Borrowing Hydrogen in the Activation of Alcohols. **2007**, 349(10), 1555–75.
14. Compain, P. Olefin Metathesis of Amine-Containing Systems. Beyond the Current Consensus. **2007**, 349(11 + 12), 1829–46.
15. Koeck, M.; Grube, A.; Seiple, I. B.; Baran, P. S. The Pursuit of Palau'amine. **2007**, 46(35), 6586–94.
16. Lee, V. Y.; Sekiguchi, A. Aromaticity of Group 14 Organometallics: Experimental Aspects. **2007**, 46(35), 6596–620.
17. Marschner, C. Hafnium: Stepping into the Limelight! **2007**, 46(36), 6770–1.
18. Clavier, H.; Grela, K.; Kirschning, A.; Mauduit, M.; Nolan, S. P. Sustainable Concepts in Olefin Metathesis. **2007**, 46(36), 6786–801.
19. Ishida, T.; Haruta, M. Gold Catalysts: Towards Sustainable Chemistry. **2007**, 46(38), 7154–6.
20. Bertelsen, S.; Nielsen, M.; Joergensen, K. A. Radicals in Asymmetric Organocatalysis. **2007**, 46(39), 7356–9.
21. Bullock, R. M. An Iron Catalyst for Ketone Hydrogenations under Mild Conditions. **2007**, 46(39), 7360–3.
22. Marek, I.; Simaan, S.; Masarwa, A. Enantiomerically Enriched Cyclopropene Derivatives: Versatile Building Blocks in Asymmetric Synthesis. **2007**, 46(39), 7364–76.
23. Neugebauer, J. Induced Chirality in Achiral Media—How Theory Unravels Mysterious Solvent Effects. **2007**, 46(41), 7738–40.
24. Atzrodt, J.; Derda, V.; Fey, T.; Zimmermann, J. The Renaissance of H/D Exchange. **2007**, 46(41), 7744–65.

### Advanced Synthesis and Catalysis

11. Ferber, B.; Kagan, H. B. Metallocene Sulfoxides as Precursors of Metallocenes with Planar Chirality. **2007**, 349(4 + 5), 493–507.

**25.** Mateo-Alonso, A.; Guldi, D. M.; Paolucci, F.; Prato, M. Fullerenes: Multitask Components in Molecular Machinery. **2007**, *46*(43), 8120–6.

### The Chemical Record

**26.** Takeda, T. Titanium Carbene Complexes as Useful Tools in Organic Synthesis. **2007**, *7*(1), 24–36.

**27.** Terao, J.; Kambe, N. Transition Metal-catalyzed Carbon–Silicon Bond Forming Reactions Using Chlorosilanes Promoted by Grignard Reagents. **2007**, *7*(1), 57–67.

**28.** Inai, Y.; Komori, H.; Ousaka, N. Control of Helix Sense in Protein-Mimicking Backbone by the Noncovalent Chiral Effect. **2007**, *7*(3), 191–202.

**29.** Arisawa, M.; Terada, Y.; Takahashi, K.; Nakagawa, M.; Nishida, A. Non-Metathesis Reactions of Ruthenium Carbene Catalysts and Their Application to the Synthesis of Nitrogen-containing Heterocycles. **2007**, *7*(4), 238–53.

### Chemical Reviews

**30.** Recupero, F.; Punta, C. Free Radical Functionalization of Organic Compounds Catalyzed by N-Hydroxyphthalimide. **2007**, *107*(9), 3800–42.

**31.** Lombardo, M.; Trombini, C.  $\alpha$ -Hydroxyallylation Reaction of Carbonyl Compounds. **2007**, *107*(9), 3843–79.

**32.** Alcaide, B.; Almendros, P.; Aragoncillo, C.  $\beta$ -Lactams: Versatile Building Blocks for the Stereoselective Synthesis of Non- $\beta$ -Lactam Products. **2007**, *107*(11), 4437–92.

**33.** Brackmann, F.; De Meijere, A. Natural Occurrence, Syntheses, and Applications of Cyclopropyl-Group-Containing  $\alpha$ -Amino Acids. 1. 1-Aminocyclopropanecarboxylic Acid and Other 2,3-Methanoamino Acids. **2007**, *107*(11), 4493–537.

**34.** Brackmann, F.; De Meijere, A. Natural Occurrence, Syntheses, and Applications of Cyclopropyl-Group-Containing  $\alpha$ -Amino Acids. 2. 3,4- and 4,5-Methanoamino Acids. **2007**, *107*(11), 4538–83.

**35.** Najera, C.; Sansano, J. M. Catalytic Asymmetric Synthesis of  $\alpha$ -Amino Acids. **2007**, *107*(11), 4584–671.

**36.** Flynn, A. B.; Ogilvie, W. W. Stereocontrolled Synthesis of Tetrasubstituted Olefins. **2007**, *107*(11), 4698–745.

**37.** Li, P.; Sergueeva, Z. A.; Dobrikov, M.; Shaw, B. R. Nucleoside and Oligonucleoside Boranophosphates: Chemistry and Properties. **2007**, *107*(11), 4746–96.

**38.** Mallat, T.; Orglmeister, E.; Baiker, A. Asymmetric Catalysis at Chiral Metal Surfaces. **2007**, *107*(11), 4863–90.

**39.** Huynh, M. H. V.; Meyer, T. J. Proton-Coupled Electron Transfer. **2007**, *107*(11), 5004–64.

**40.** Albu, T. V.; Espinosa-Garcia, J.; Truhlar, D. G. Computational Chemistry of Polyatomic Reaction Kinetics and Dynamics: The Quest for an Accurate CH<sub>5</sub> Potential Energy Surface. **2007**, *107*(11), 5101–32.

**41.** Mellah, M.; Voituriez, A.; Schulz, E. Chiral Sulfur Ligands for Asymmetric Catalysis. **2007**, *107*(11), 5133–209.

**42.** Ozturk, T.; Ertas, E.; Mert, O. Use of Lawesson's Reagent in Organic Syntheses. **2007**, *107*(11), 5210–78.

**43.** Enders, D.; Niemeier, O.; Henseler, A. Organocatalysis by N-Heterocyclic Carbenes. **2007**, *107*(12), 5606–55.

**44.** Akiyama, T. Stronger Bronsted Acids. **2007**, *107*(12), 5744–58.

**45.** Greaves, T. L.; Drummond, C. J. Protic Ionic Liquids: Properties and Applications. **2008**, *108*(1), 206–37.

### Chemical Society Reviews

**46.** Liu, S.; Han, Y.-F.; Jin, G.-X. Formation of Direct Metal–Metal Bonds from 16-Electron “Pseudo-Aromatic” Half-Sandwich Complexes Cp’M[E<sub>2</sub>C<sub>2</sub>(B<sub>10</sub>H<sub>10</sub>)]. **2007**, *36*(10), 1543–60.

**47.** Satoh, T. Recent Advances in the Chemistry of Magnesium Carbenoids. **2007**, *36*(10), 1561–72.

**48.** Basavaiah, D.; Rao, K. V.; Reddy, R. J. The Baylis–Hillman Reaction: A Novel Source of Attraction, Opportunities, and Challenges in Synthetic Chemistry. **2007**, *36*(10), 1581–8.

**49.** Rosillo, M.; Dominguez, G.; Perez-Castells, J. Chromium Arene Complexes in Organic Synthesis. **2007**, *36*(10), 1589–604.

**50.** Angell, Y. L.; Burgess, K. Peptidomimetics via Copper-Catalyzed Azide-Alkyne Cycloadditions. **2007**, *36*(10), 1674–89.

**51.** Meyer, C. D.; Joiner, C. S.; Stoddart, J. F. Template-directed Synthesis Employing Reversible Imine Bond Formation. **2007**, *36*(11), 1705–23.

**52.** Liddle, S. T.; Edworthy, I. S.; Arnold, P. L. Anionic Tethered N-Heterocyclic Carbene Chemistry. **2007**, *36*(11), 1732–44.

**53.** Hierso, J.-C.; Smaliy, R.; Amardeil, R.; Meunier, P. New Concepts in Multidentate Ligand Chemistry: Effects of Multidentarity on Catalytic and Spectroscopic Properties of Ferrocenyl Polyphosphines. **2007**, *36*(11), 1754–69.

**54.** Bowman, W. R.; Storey, J. M. D. Synthesis using Aromatic Homolytic Substitution—Recent Advances. **2007**, *36*(11), 1803–22.

**55.** Snape, T. J. Recent Advances in the Semi-Pinacol Rearrangement of  $\alpha$ -Hydroxy Epoxides and Related Compounds. **2007**, *36*(11), 1823–42.

### Chemistry—A European Journal

**56.** Serra, S.; Fuganti, C.; Brenna, E. Recent Advances in the Benzannulation of Substituted 3-Alkoxy carbonyl-3,5-Hexadienoic Acids and 3-Alkoxy carbonylhex-3-en-5-yneic Acids to Polysubstituted Aromatics. **2007**, *13*(24), 6782–91.

**57.** Miyabe, H.; Takemoto, Y. Enantioselective Radical Cyclizations: A New Approach to Stereocontrol of Cascade Reactions. **2007**, *13*(26), 7280–6.

**58.** Jensen, H. H.; Pedersen, C. M.; Bols, M. Going to Extremes: “Super” Armed Glycosyl Donors in Glycosylation Chemistry. **2007**, *13*(27), 7576–82.

**59.** Gansaeuer, A.; Fan, C.-A.; Keller, F.; Karbaum, P. Regiodivergent Epoxide Opening: A Concept in Stereoselective Catalysis Beyond Classical Kinetic Resolutions and Desymmetrizations. **2007**, *13*(29), 8084–90.

### Chemistry of Heterocyclic Compounds

**60.** Selina, A. A.; Karlov, S. S.; Zaitseva, G. S. Metallocanes of Group 14 Elements. 1. Derivatives of Silicon and Germanium. (Review) **2006**, *42*(12), 1518–56.

**61.** Lyaskovskyy, V. V.; Voitenko, Z. V.; Kovtunenko, V. A. 11H-Isoindolo[2,1-a]benzimidazoles (Review). **2007**, *43*(3), 253–76.

**62.** Abele, E.; Abele, R.; Lukevics, E. Oximes of Five-membered Heterocyclic Compounds with Two Heteroatoms. Part 1. Synthesis and Structure. **2007**, *43*(4), 387–407.

**CHEMTRACTS: Organic Chemistry**

- 63.** West, D. C. Recent Progress Toward Catalyzed Anti-Selective Mannich-Type Reactions. **2006**, *19*(4), 129–35.
- 64.** Rashatasakhan, P.; Harmata, M. Chiral Nitrenes from Sulfonimidamides. **2006**, *19*(4), 143–51.
- 65.** Welch, G. C.; San Juan, R. R.; Masuda, J. D.; Stephan, D. W. Reversible Metal-Free Hydrogen Activation. **2006**, *19*(4), 152–6.
- 66.** Dunne, J. F.; Woo, L. K. Synthesis and Reactivity of Molybdenum Imido Diamido Metallacyclopentenes and Metallacyclopentadienes and the Mechanism of Ethylene Exchange with Metallacyclopentane Complexes. **2006**, *19*(5), 186–92.
- 67.** Garabatos-Perera, J. R.; Saez-Diaz, R. I. New Highly Efficient Ruthenium Metathesis Catalysts. **2006**, *19*(7), 270–9.
- 68.** Painter, T. O.; Brummond, K. M. The Direct Proline-Catalyzed Enantioselective Aza-Diels–Alder Reaction: From Development to Use in Natural Product Synthesis. **2006**, *19*(10), 377–84.

**Coordination Chemistry Reviews**

- 69.** Antonova, A. B. Use of the Mn:C:C System in Organometallic and Organic Synthesis. **2007**, *25*(11+12), 1521–60.
- 70.** Chizhevsky, I. T. Large-Cage (11–13-Vertex) Dicarbon Metalla-carboranes of Platinum Metals with Mono- and Polycyclic Diolefin Ligands. **2007**, *25*(11+12), 1590–619.
- 71.** Li, Y.-M.; Kwong, F.-Y.; Yu, W.-Y.; Chan, A. S. C. Recent Advances in Developing New Axially Chiral Phosphine Ligands for Asymmetric Catalysis. **2007**, *25*(17–20), 2119–44.
- 72.** Lin, Z. Current Understanding of the  $\sigma$ -Bond Metathesis Reactions of  $L_nMR + R'-H \rightarrow L_nMR' + R-H$ . **2007**, *25*(17–20), 2280–91.

**Current Organic Chemistry**

- 73.** Mentel, M.; Breinbauer, R. The Witkop-Winterfeldt Oxidation of Indoles. **2007**, *11*(2), 159–76.
- 74.** Mutai, T.; Araki, K. Fluorescent Oligopyridines and Their Photo-functionality as Tunable Fluorophores. **2007**, *11*(2), 195–211.
- 75.** Lee, A. W. M.; Chan, W. H.; Zhang, S.-J.; Zhang, H.-K. Non Camphor Based Sultam Chiral Auxiliaries. **2007**, *11*(2), 213–28.
- 76.** Braune, S.; Deb, S.; Hase, T.; Wahala, K. Homologation of Estrone or Estradiol. Appending a Carbon Substituent into the 3-Hydroxyestra-1,3,5-Triene Skeleton. **2007**, *11*(4), 383–405.
- 77.** Aleu, J.; Bustillo, A. J.; Hernandez-Galan, R.; Collado, I. G. Biocatalysis Applied to the Synthesis of Pheromones. **2007**, *11*(8), 693–705.
- 78.** Aversa, M. C.; Barattucci, A.; Bonaccorsi, P.; Giannetto, P. Recent Advances and Perspectives in the Chemistry of Sulfenic Acids. **2007**, *11*(12), 1034–52.
- 79.** Jesce, M. R.; Cermola, F.; Rubino, M. Photooxygenation of Non-Aromatic Heterocycles. **2007**, *11*(12), 1053–75.
- 80.** Grobelny, Z.; Stolarzewicz, A.; Maercker, A. Stepwise Two-Electron-Transfer Reduction of Cyclic Ethers and Lactones with Alkalide  $K^-$ ,  $K^+(15\text{-Crown-}5)_2$ . **2007**, *11*(13), 1126–34.
- 81.** Marek, R.; Lycka, A.; Kolehmainen, E.; Sievanen, E.; Tousek, J.  $^{15}\text{N}$  NMR Spectroscopy in Structural Analysis: An Update (2001–5). **2007**, *11*(13), 1154–205.

**European Journal of Organic Chemistry**

- 82.** Shoji, M.; Hayashi, Y. Chemistry of Epoxyquinols A, B, and C and Epoxytwinol A. **2007**, *(23)*, 3783–800.
- 83.** Sellars, J. D.; Steel, P. G. Advances in the Synthesis of Aryltetralin Lignan Lactones. **2007**, *(23)*, 3815–28.
- 84.** van den Bos, L. J.; Codee, J. D. C.; Litjens, R. E. J. N.; Dinkelaar, J.; Overkleef, H. S.; van der Marel, G. A. Uronic Acids in Oligosaccharide Synthesis. **2007**, *(24)*, 3963–76.
- 85.** Catellani, M.; Motti, E.; Della Ca, N.; Ferraccioli, R. Recent Developments in Catalytic Aryl Coupling Reactions. **2007**, *(25)*, 4153–65.
- 86.** Kienle, M.; Dubbaka, S. R.; Brade, K.; Knochel, P. Modern Amination Reactions. **2007**, *(25)*, 4166–76.
- 87.** Murphy, P. V. Peptidomimetics, Glyco-mimetics and Scaffolds from Carbohydrate Building Blocks. **2007**, *(25)*, 4177–87.
- 88.** Mentel, M.; Breinbauer, R. Electrons as a Reagent in Solid-Phase Organic Synthesis. **2007**, *(26)*, 4283–92.
- 89.** Diaz, D. J.; Darko, A. K.; McElwee-White, L. Transition Metal-Catalyzed Oxidative Carbonylation of Amines to Ureas. **2007**, *(27)*, 4453–65.
- 90.** Dieguez, M.; Claver, C.; Pamies, O. Recent Progress in Asymmetric Catalysis using Chiral Carbohydrate-Based Ligands. **2007**, *(28)*, 4621–34.
- 91.** Iriondo-Alberdi, J.; Greaney, M. F. Photocycloaddition in Natural Product Synthesis. **2007**, *(29)*, 4801–15.
- 92.** Mori, M. Regio- and Stereoselective Synthesis of Tri- and Tetrasubstituted Alkenes by Introduction of  $\text{CO}_2$  and Alkylzinc Reagents into Alkynes. **2007**, *(30)*, 4981–93.
- 93.** Schaefer, M.; Drayue, M.; Springer, A.; Zacharias, P.; Meerholz, K. Radical Cations in Electrospray Mass Spectrometry: Formation of Open-Shell Species, Examination of the Fragmentation Behavior in ESI-MSn and Reaction Mechanism Studies by Detection of Transient Radical Cations. **2007**, *(31)*, 5162–74.

**Journal of Fluorine Chemistry**

- 94.** Singh, S.; Roesky, H. W. Fluorine Functionalized Compounds of Group 13 Elements. **2007**, *128*(4), 369–77.
- 95.** Ma, J.-A.; Cahard, D. Strategies for Nucleophilic, Electrophilic, and Radical Trifluoromethylations. **2007**, *128*(9), 975–96.

**Journal of Organometallic Chemistry**

- 96.** Liu, R.; Zhou, X. Reactivity of the Metal-Cyclopentadienyl (Indenyl, Fluorenyl and Cycloheptatrienyl) Bonds. **2007**, *692*(21), 4424–35.
- 97.** Antinolo, A.; Garcia-Yuste, S.; Otero, A.; Villasenor, E. On the Insertion Processes of Unsaturated Molecules into the  $\text{Nb}-X$   $\sigma$ -bond of “ $\text{Cp}'2\text{NbX}$ ” Moieties ( $\text{Cp}' = \eta^5\text{C}_5\text{H}_4\text{SiMe}_3$ ;  $X = \text{H}, \text{C}, \text{P}$ ). **2007**, *692*(21), 4436–47.
- 98.** Cano, J.; Sudupe, M.; Royo, P. Synthesis and Reactivity of Di(silylamido)cyclopentadienyl Titanium and Zirconium Complexes. **2007**, *692*(21), 4448–59.
- 99.** Eisch, J. J.; Fregene, P. O.; Gitua, J. N. The Epimetallation and Carbonation of Carbonyl and Imino Derivatives: Epivana-dation Route to 2-Amino and 2-Hydroxy Acids. **2007**, *692*(21), 4647–53.

**Science**

- 100.** Gunanathan, C.; Ben-David, Y.; Milstein, D. Direct Synthesis of Amides from Alcohols and Amines with Liberation of  $\text{H}_2$ . **2007**, *317*(5839), 790–2.

- 101.** Vilotijevic, I.; Jamison, T. F. Epoxide-Opening Cascades Promoted by Water. **2007**, *317*(5842), 1189–92.
- 102.** Balskus, E. P.; Jacobsen, E. N. Asymmetric Catalysis of the Transannular Diels–Alder Reaction. **2007**, *317*(5845), 1736–40.
- 103.** Ferrand, Y.; Crump, M. P.; Davis, A. P. A Synthetic Lectin Analog for Biomimetic Disaccharide Recognition. **2007**, *318*(5850), 619–22.
- 104.** Chen, M. S.; White, M. C. A Predictably Selective Aliphatic C–H Oxidation Reaction for Complex Molecule Synthesis. **2007**, *318*(5851), 783–7.

### Synlett

- 105.** Harada, T.; Kusukawa, T. Development of Highly Enantioselective Oxazaborolidinone Catalysts for the Reactions of Acyclic  $\alpha,\beta$ -Unsaturated Ketones. **2007**, *(12)*, 1823–35.
- 106.** Lin, L.; Liu, X.; Feng, X. Asymmetric Hetero-Diels–Alder Reactions of Danishefsky's and Brassard's Dienes with Aldehydes. **2007**, *(14)*, 2147–57.
- 107.** Diez-Gonzalez, S.; Nolan, S. P. N-Heterocyclic Carbene–Copper(I) Complexes in Homogeneous Catalysis. **2007**, *(14)*, 2158–67.
- 108.** Ramon, D. J.; Yus, M. Chiral Ligands with an Isoborneol-10-sulfonamide Structure: A Ten-year Odyssey. **2007**, *(15)*, 2309–20.
- 109.** Pal, R.; Ghosh, S. C.; Chandra, K.; Basak, A. Synthesis of  $\beta$ -Lactams Using the Kinugasa Reaction. **2007**, *(15)*, 2321–30.
- 110.** Bagley, M. C.; Glover, C.; Merritt, E. A. The Bohlmann–XPRTRahtz Pyridine Synthesis: From Discovery to Applications. **2007**, *(16)*, 2459–82.
- 111.** Takeda, N.; Tokitoh, N. A Bulky Silylene Generated Under Mild Conditions: Its Application to the Synthesis of Organosilicon Compounds. **2007**, *(16)*, 2483–91.
- 112.** Kawase, T. The Synthesis and Physicochemical and Supramolecular Properties of Strained Phenylacetylene Macrocycles. **2007**, *(17)*, 2609–26.
- 113.** Glueck, D. S. Metal-Catalyzed Asymmetric Synthesis of P-Stereogenic Phosphines. **2007**, *(17)*, 2627–34.
- 114.** Kotha, S.; Lahiri, K. Synthesis of Diverse Polycyclic Compounds via Catalytic Metathesis. **2007**, *(18)*, 2767–84.

### Synthesis—Stuttgart

- 115.** Vicario, J. L.; Badia, D.; Carrillo, L. Organocatalytic Enantioselective Michael and Hetero-Michael Reactions. **2007**, *(14)*, 2065–92.
- 116.** Solinas, A.; Taddei, M. Solid-Supported Reagents and Catch-and-Release Techniques in Organic Synthesis. **2007**, *(16)*, 2409–53.
- 117.** Piccialli, V. Oxidative Cyclization of Dienes and Polyenes Mediated by Transition-metal-oxo Species. **2007**, *(17)*, 2585–607.

- 118.** Richardson, S. K.; Howell, A. R. Synthesis and Reactions of 2-Alkylidene Thiiranes and Thietanes. **2007**, *(18)*, 2755–78.

- 119.** Shuklov, I. A.; Dubrovina, N. V.; Boerner, A. Fluorinated Alcohols as Solvents, Cosolvents and Additives in Homogeneous Catalysis. **2007**, *(19)*, 2925–43.

### Tetrahedron

- 120.** Pellissier, H. Asymmetric Organocatalysis. **2007**, *63*(38), 9267–331.
- 121.** Ferraris, D. Catalytic, Asymmetric Alkylation of Imines. **2007**, *63*(39), 9581–97.
- 122.** Martins, M. B.; Carvalho, I. Diketopiperazines: Biological Activity and Synthesis. **2007**, *63*(40), 9923–32.
- 123.** Davies, A. G. Organosilicon Peroxides: Radicals and Rearrangements. **2007**, *63*(42), 10385–405.
- 124.** Oueslati, I. Calix(aza)crowns: Synthesis, Recognition, and Coordination. A Mini Review. **2007**, *63*(44), 10840–51.
- 125.** Bellur, E.; Feist, H.; Langer, P. Recent Advances in the Chemistry of 2-(2-Oxoalkylidene)tetrahydrofurans. **2007**, *63*(45), 10865–88.
- 126.** Chapelon, A.-S.; Moraleda, D.; Rodriguez, R.; Ollivier, C.; Santelli, M. Enantioselective Synthesis of Steroids. **2007**, *63*(47), 11511–616.
- 127.** Ballini, R.; Palmieri, A.; Righi, P. Highly Efficient One- or Two-step Sequences for the Synthesis of Fine Chemicals from Versatile Nitroalkanes. **2007**, *63*(49), 12099–121.

### Tetrahedron: Asymmetry

- 128.** Grajewska, A.; Rozwadowska, M. D. Stereoselective Synthesis of Cytoxazole and Its Analogs. **2007**, *18*(7), 803–13.
- 129.** Risseeuw, M. D. P.; Overhand, M.; Fleet, G. W. J.; Simone, M. I. A Compendium of Sugar Amino Acids (SAA): Scaffolds, Peptide- and Glyco-Mimetics. **2007**, *18*(17), 2001–10.
- 130.** Guillena, G.; Najera, C.; Ramon, D. J. Enantioselective Direct Aldol Reaction: The Blossoming of Modern Organocatalysis. **2007**, *18*(19), 2249–93.

### Topics in Current Chemistry

- 131.** Wolter, F.; Schoof, S.; Suessmuth, R. D. Synopsis of Structural, Biosynthetic, and Chemical Aspects of Glycopeptide Antibiotics. **2007**, *267*(Glycopeptides and Glycoproteins), 143–85.
- 132.** Yoshioka, R. Racemization, Optical Resolution and Crystallization-Induced Asymmetric Transformation of Amino Acids and Pharmaceutical Intermediates. **2007**, *269*(Novel Optical Resolution Technologies), 83–132.
- 133.** Coleman, A. W.; Perret, F.; Moussa, A.; Dupin, M.; Guo, Y.; Perron, H. Calix[n]arenes as Protein Sensors. **2007**, *277*(Creative Chemical Sensor Systems), 31–88.

### Monographs

- 134.** Barnes, A. J., Koll, A., Ratajczak, H., Eds. Special Issue: Studies of Hydrogen-Bonded Systems: [In: *J. Mol. Struct.*, **2007**; 844–5]. Elsevier: Amsterdam, Netherlands, 2007.

- 135.** Brown, D. J., Wipf, P., Taylor, E. C., Eds. Cinnolines and Phthalazines: Supplement II; Vol. 64. Wiley: Hoboken, NJ, 2005.

- 136.** de Vries, J. G., Elsevier, C. J., Eds. *Handbook of Homogeneous Hydrogenation*, Vols. 2–3. Wiley-VCH: Weinheim, Germany, 2007.
- 137.** Dyker, G., Ed. *Handbook of C–H Transformations: Applications in Organic Synthesis*, Vol. 2. Wiley-VCH: Weinheim, Germany, 2005.
- 138.** Enders, D., Jaeger, K.-E., Eds. *Asymmetric Synthesis with Chemical and Biological Methods*. Wiley-VCH: Weinheim, Germany, 2007.
- 139.** Kappe, C. O., Stadler, A., Eds. *Microwaves in Organic and Medicinal Chemistry*. Wiley-VCH: Weinheim, Germany, 2005.
- 140.** Knochel, P., Ed. *Handbook of Functionalized Organometallics: Applications in Synthesis*, Vols. 1–2. Wiley-VCH: Weinheim, Germany, 2005.
- 141.** Kotschy, A., Timari, G., Eds. *Heterocycles from Transition Metal Catalysis: Formation and Functionalization*. Springer: Berlin, Germany, 2005.
- 142.** Li, J. J., Ed. *Name Reactions in Heterocyclic Chemistry*. John Wiley: Hoboken, NJ, 2005.
- 143.** Loupy, A., Ed. *Microwaves in Organic Synthesis*: Second, Completely Revised and Enlarged Edition, Vols. 1–2. Wiley-VCH: Weinheim, Germany, 2006.
- 144.** Olah, G. A., Klumpp, D. A., Eds. *Superelectrophiles and Their Chemistry*. John Wiley: Hoboken, NJ, 2008.
- 145.** Overman, L. E., Ed. *Organic Reactions*, Vol. 69. John Wiley: Hoboken, NJ, 2007.
- 146.** Ramsden, C. A., Ed. *Compounds with Two Carbon-Heteroatom Bonds*. [In: *Sci. Synth.*, 2007; 31a]. Georg Thieme Verlag: Stuttgart, Germany, 2007.
- 147.** Tietze, L. F., Eicher, T., Diederichsen, U., Speicher, A., Eds. *Reactions and Syntheses in the Organic Chemistry Laboratory*. Wiley-VCH: Weinheim, Germany, 2007.
- 148.** Ulrich, H., Ed. *Chemistry and Technology Carbodiimides*. John Wiley: West Sussex, U.K., 2007.
- 149.** Zewail, A., Ed. *Hydrogen-Transfer Reactions: Vols. 1–2, Physical and Chemical Aspects*. Wiley-VCH: Weinheim, Germany, 2007.

## Index

Alcohol oxidation, with Au, 19  
 activation, 13  
 allylic, synthesis, 9  
 Aldehydes, alkyne addition, 9  
 hydrocarboxylation, 99  
 Aldol reaction, direct, enantioselective, 130  
 Alk-1-ene-3,4-diols, synthesis, 31  
 Alkenes, asymmetric hydrogenation, with Ir, 10  
 hydrosilylation, 12  
 metalation, 2  
 silylative coupling, 2  
 tetrasubstituted, 36  
 tetrasubstituted, from alkynes, 92  
 Alkylidenetetrahydrofurans, 125  
 Amides, direct synthesis, 100  
 Amination, 86  
 Amines, allylic, synthesis, 9  
 carbonylation to ureas, 89  
 diaryl-, synthesis, 86  
 from alcohols, 13  
 functionalized, synthesis, 86  
 Amino acids,  $\alpha$ -, constrained, synthesis, 114  
 $\alpha$ -, synthesis, 35  
 asymmetric transformations, 132  
 Aminocatalysis, with radicals, 20  
 Aminocyclopropanecarboxylic acids, 33  
 Aminotetralin AR-A2 drug synthesis, 8  
 Anticancer agents, podophyllotoxins, 83  
 Aromatics, group 14 organometallics, 16  
 homolytic substitution, 54  
 polysubstituted, via benzannulation, 56  
 Aryl coupling, with metallacycles, 85  
 Aryltetralin lignan lactones, 83  
 Asymmetric synthesis, book, 138  
 Aza-Diels–Alder reaction, 68  
 Azetidinones, non- $\beta$ -lactam products, 32  
 Azide-alkyne cycloaddition, 50  
 Baylis–Hillman reaction, 48  
 Bis-phosphite ligands, 4  
 Boranophosphates, nucleosides, 37  
 Bronsted acids, catalysts, 44  
 Calix(aza)crowns, 124  
 Calixarenes, azacrown, 124  
 protein sensors, 133  
 Carbenes, N-heterocyclic, 52  
 N-heterocyclic, copper complexes, 107  
 N-heterocyclic, organocatalysis, 43  
 Carbodiimides, book, 148  
 Carbohydrate ligands, asymmetric catalysis, 90  
 Carboxylation, alkylative, 92  
 Cascade radical cyclization, enantioselective, 57  
 Catalytic metathesis reactions, 114  
 Catch-and-release synthesis, 116  
 C–H activation, 72  
 Hf, 17  
 N-hydroxyphthalimide, 30  
 C–H oxidation, Fe with  $H_2O_2$ , 104  
 C–H transformations, book, 137  
 Chiral solvent effect, 23  
 Chlorosilanes, C–Si bonds, 27  
 Chromium arene complexes, 49  
 Click reaction, 50

Cyclophanes, via ring-closing metathesis, 114  
 Cyclopropene building blocks, 22  
 Cyclopropylalanines, 34  
 Cyclopropylglycines, 34  
 Cytoxazole, synthesis, 128  
 Danishefsky's dienes, Diels–Alder, 106  
 Deuterium labeling, 24  
 Di(silylamido)cyclopentadienyl ligand, 98  
 Diels–Alder reaction, transannular, asymmetric, 102  
 Dienes, oxidative cyclization, 117  
 Diketones, 1,4-, N-heterocyclic carbenes, 43  
 Diketopiperazines, 122  
 Dioxirane oxidation, book, 145  
 Disaccharide receptor, synthetic, 103  
 Electron transfer, proton-coupled, 39  
 Epoxide opening, regiodivergent, 59  
 Epoxides, cascade opening, 101  
 Epoxyquinols, 82  
 Epoxytwinols, 82  
 Estradiol, homologation, 76  
 Estrone, homologation, 76  
 Ethene polymerization catalysts, 98  
 Ethers, cyclic, with K anions, 80  
 Ferrocenyl polyphosphines, 53  
 Fluorescent oligopyridines, 74  
 Fluorinated alcohols, 119  
 Fluorination, N–F, book, 145  
 Fluoroalkylations, with sulfones, 1  
 Fullerenes, 25  
 Glyco-mimetics, 87  
 Glycopeptide antibiotics, 131  
 Glycosylation, 58  
 Gold catalysis, alcohol oxidation, 19  
 Hafnium, bond activation, 17  
 Heteroaromatics, asymmetric hydrogenation, 7  
 Heterocycles, cinnolines, book, 135  
 named reactions, book, 142  
 N-containing, Ru, 29  
 phthalazines, book, 135  
 Si, Ge, Te, photooxygenation, 79  
 two heteroatoms, book, 146  
 via transition metals, book, 141  
 Hydroformylation, with Rh, ligands, 4  
 Hydrogen activation, metal-free, 65  
 Hydrogen transfer reactions, book, 149  
 Hydrogenation, homogeneous, book, 136  
 perfume synthesis, 6  
 Hydrogen-bonded systems, book, 134  
 Hydroxy epoxides, semi-pinacol rearrangement, 55  
 Hydroxyallylation,  $\alpha$ - of carbonyls, 31  
 Imidazol-2-ylidene, 43  
 Imidazole oximes, 62  
 Imines, alkyne addition, 9  
 asymmetric alkylation, 121  
 hydrocarboxylation, 99  
 in template directed synthesis, 51  
 Indoles, oxidation, 73  
 Ionic liquids, properties, 3  
 protic, 45  
 Isoborneolsulfonamide ligands, 108  
 Isoindolobenzimidazoles, 61  
 Ketones, hydrocarboxylation, 99  
 hydrogenation, with Fe, 21  
 Lactams,  $\beta$ -, in synthesis, 32  
 Kinugasa synthesis, 109  
 Lactones, with potassium anions, 80  
 Lawesson's reagent, 42  
 Lectin analogs, 103  
 Ligands, atropisomeric, 5  
 bisphosphine, 5  
 phosphocyclic, 5  
 Magnesium carbenoids, 47  
 Mannich-type reactions, anti-selective, 63  
 Marine natural products, palau'amine, 15  
 Mass spectrometry, electrospray, 93  
 Metal–cyclopentadienyl bonds, 96  
 Metallacarbonates, Pt, diolefin ligands, 70  
 Metallacyclopentenes, 66  
 Metallocenes, Si and Ge, 60  
 sulfoxides, 11  
 Metals, chiral modified, 38  
 Methanoamino acids, 33–4  
 Michael additions, 115  
 Microwaves, in synthesis, book, 143  
 medicinal chemistry, book, 139  
 Molecular machines, from fullerenes, 25  
 N-hydroxyphthalimide, C–H activation, 30  
 Niobocene, insertion reactions, 97  
 Nitrenes, chiral, from sulfonimidamides, 64  
 Nitroalkanes, transformations, 127  
 NMR,  $^{15}N$ , 81  
 Olefin metathesis, Ru, 18  
 Ti carbenes, 26  
 to alkaloids, 14  
 to amine heterocycles, 14  
 Oligopyridines, fluorescent, 74  
 Oligosaccharides, with uronic acids, 84  
 Organoaluminum fluorides, 94  
 Organocatalysis, asymmetric, 120  
 Organometallic chemistry, 72  
 Organometallics, in synthesis, book, 140  
 Mn:C:C system, 69  
 Organosilicon compounds, 111  
 Organosilicon peroxides, 123  
 Oxazaborolidinone catalysts, unsaturated ketones, 105  
 Oxazole oximes, 62  
 Peptides, cyclic, diketopiperazines, 122  
 Peptidomimetics, 87  
 azide–alkyne cycloaddition, 50  
 sugar amino acids, 129  
 helix, 28  
 Phenylacetylene macrocycles, 112  
 Phenylethylamine, AR–A2 synthesis, 8  
 Pheromones, via biocatalysis, 77  
 Phosphine ligands, asymmetric catalysis, 90  
 axially chiral, 71  
 Phosphines, P-stereogenic, 113  
 Photocyclization, natural product synthesis, 91  
 Phthalimido-N-oxyl radical, 30  
 Polycycles, via transannular Diels–Alder, 102  
 Polyethers, ladder, 101  
 Potential energy surface, CH<sub>5</sub>, 40  
 Pseudo-aromatic half sandwich complexes, 46  
 Pyridine synthesis, 110

Quinolones, from indoles, 73  
Radicals, aminocatalysis, 20  
Ruthenium carbens, non-metathesis reactions, 29  
Ruthenium metathesis catalysts, 67  
Semi-pinacol rearrangement, with  $\alpha$ -hydroxy epoxides, 55  
Sigma bond activation, 72  
Silylation, with chlorosilanes, 27  
Solid supports, 116  
Solid-phase synthesis, electron-transfer reactions, 88

Spirocyclic compounds, synthesis, 114  
Steroids, enantioselective synthesis, 126  
Sugar amino acids, 129  
Sulfenic acids, 78  
Sulfonylation, 42  
Sulfones, cyclic, synthesis, 114  
Sulfur ligands, 41  
Sultams, chiral, non-camphor, 75  
Superelectrophiles, book, 144  
Synthesis, book, 147  
Terpenes, via transannular Diels–Alder, 102

Tetracyclic compounds, synthesis, 114  
Tetrahydropyran template, 101  
Thiazol-2-ylidenes, 43  
Thiazole oximes, 62  
Thietanes, alkylidenes, 118  
Thiiranes, alkylidenes, 118  
Titanium carbenes, 26  
Triazol-2-ylidenes, 43  
Trifluoromethylation, 95  
Ureas, from amines, via CO, 89  
Uronic acids, in oligosaccharides, 84

JO800442D