

## *Recent Reviews. 67*

compiled by Veronica M. Cornel

*Department of Chemistry, Reedley College, 339 West Carpenter 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 middle part of the 2002 literature. Previous installment: *J. Org. Chem.* **2002**, 67(20), 7169–74.

**Supporting Information Available:** A file containing this Recent Review compilation in Microsoft Word and the data in rtf format. 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. Trost, B. M. On Inventing Reactions for Atom Economy. **2002**, 35(9), 695–705.
2. Tundo, P.; Selva, M. The Chemistry of Dimethyl Carbonate. **2002**, 35(9), 706–16.
3. Larhed, M.; Moberg, C.; Hallberg, A. Microwave-Accelerated Homogeneous Catalysis in Organic Chemistry. **2002**, 35(9), 717–27.
4. Joo, F. Aqueous Biphasic Hydrogenations. **2002**, 35(9), 738–45.
5. Leitner, W. Supercritical Carbon Dioxide as a Green Reaction Medium for Catalysis. **2002**, 35(9), 746–56.
6. Sheldon, R. A.; Arends, I. W. C. E.; ten Brink, G.-J.; Dijkman, A. Green, Catalytic Oxidations of Alcohols. **2002**, 35(9), 774–81.
7. Kakiuchi, F.; Murai, S. Catalytic C–H/Olefin Coupling. **2002**, 35(10), 826–34.
8. Denmark, S. E.; Sweis, R. F. Design and Implementation of New, Silicon-Based, Cross-Coupling Reactions: Importance of Silicon–Oxygen Bonds. **2002**, 35(10), 835–46.
9. Liao, C.-C.; Peddinti, R. K. Masked *o*-Benzoquinones in Organic Synthesis. **2002**, 35(10), 856–66.
10. Nakamura, E.; Yamago, S. Thermal Reactions of Dipolar Trimethylenemethane Species. **2002**, 35(10), 867–77.
11. Kovacs, A.; Szabo, A.; Hargittai, I. Structural Characteristics of Intramolecular Hydrogen Bonding in Benzene Derivatives. **2002**, 35(10), 887–94.
12. Martin, S. F. Evolution of the Vinylogous Mannich

Reaction as a Key Construction for Alkaloid Synthesis. **2002**, 35(10), 895–904.

13. Widenhoefer, R. A. Synthetic and Mechanistic Studies of the Cycloisomerization and Cyclization/Hydrosilylation of Functionalized Dienes Catalyzed by Cationic Palladium(II) Complexes. **2002**, 35(10), 905–13.
14. Marsella, M. J. Classic Annulenes, Nonclassical Applications. **2002**, 35(11), 944–51.
15. Ellman, J. A.; Owens, T. D.; Tang, T. P. N-tert-Butanesulfinyl Imines: Versatile Intermediates for the Asymmetric Synthesis of Amines. **2002**, 35(11), 984–95.

#### Advanced Synthesis and Catalysis

16. Nakamura, I.; Yamamoto, Y. Transition Metal-Catalyzed Reactions of Methylenecyclopropanes. **2002**, 344(2), 111–29.
17. Katsuki, T. Chiral Metallosalen Complexes: Structures and Catalyst Tuning for Asymmetric Epoxidation and Cyclopropanation. **2002**, 344(2), 131–47.

#### Advances in Heterocyclic Chemistry

18. Sadimenko, A. P. Organometallic Complexes of Pyrazolylborates and Related Ligands. **2001**, 81, 167–252.

#### Angewandte Chemie, International Edition in English

19. Herrmann, W. A. N-Heterocyclic Carbenes. Part 31. N-Heterocyclic Carbenes: A New Concept in Organometallic Catalysis. **2002**, 41(8), 1290–309.

**20.** Reetz, M. T. New Methods for the High-Throughput Screening of Enantioselective Catalysts and Biocatalysts. **2002**, *41*(8), 1335–8.

**21.** Hof, F.; Craig, S. L.; Nuckolls, C.; Rebek, J., Jr. Molecular Encapsulation. **2002**, *41*(9), 1488–508.

**22.** Klok, H.-A. Protein-Inspired Materials: Synthetic Concepts and Potential Applications. **2002**, *41*(9), 1509–13.

**23.** Corey, E. J. Catalytic Enantioselective Diels–Alder Reactions: Methods, Mechanistic Fundamentals, Pathways, and Applications. **2002**, *41*(10), 1650–67.

**24.** Nicolaou, K. C.; Snyder, S. A.; Montagnon, T.; Vassilikogiannakis, G. The Diels–Alder Reaction in Total Synthesis. **2002**, *41*(10), 1668–98.

**25.** Effenberger, F. How Attractive is Bromine as a Protecting Group in Aromatic Chemistry? **2002**, *41*(10), 1699–700.

**26.** Koch, R.; Weidenbruch, M. A Spiropentasiladiene and Other Strained Silicon-Containing Rings. **2002**, *41*(11), 1861–3.

**27.** Kuhnert, N. Microwave-Assisted Reactions in Organic Synthesis – Are There any Nonthermal Microwave Effects? **2002**, *41*(11), 1863–6.

**28.** Knowles, W. S. Asymmetric Hydrogenations (Nobel Lecture). **2002**, *41*(12), 1998–2007.

**29.** Sharpless, K. B. Searching for New Reactivity (Nobel Lecture). **2002**, *41*(12), 2024–32.

**30.** Ritter, T.; Carreira, E. M. The Diazonamides: The Plot Thickens. **2002**, *41*(14), 2489–95.

### Australian Journal of Chemistry

**31.** Huang, C.-L.; Jiang, J.-C.; Lin, S. H.; Lee, Y. T.; Ni, C.-K. Photodissociation and Photoisomerization of Small Aromatic Molecules in a Molecular Beam. **2001**, *54*(9 & 10), 561–71.

**32.** Toda, F. Crystalline Inclusion Complexes as Media of Molecular Recognitions and Selective Reactions. **2001**, *54*(9 & 10), 573–82.

**33.** Pescarmona, P. P.; Maschmeyer, T. Oligomeric Silsesquioxanes: Synthesis, Characterization and Selected Applications. **2001**, *54*(9 & 10), 583–96.

**34.** Bohmer, V.; Vysotsky, M. O. Self-assembly of Hydrogen-Bonded Capsules. **2001**, *54*(11), 671–7.

**35.** Jones, G. A. Application of Trajectory Surface-Hopping Techniques for Modeling Electron-Transfer Processes in Organic Systems. **2001**, *54*(12), 777.

**36.** Johnson, M. A.; Pinto, B. M. Molecular Mimicry of Carbohydrates by Peptides. **2002**, *55*(1 & 2), 13–25.

**37.** Dell, A. Structures of Glycoprotein Glycans. **2002**, *55*(1 & 2), 27–37.

**38.** Endo, T.; Zheng, M.; Zimmermann, W. Enzymatic Synthesis and Analysis of Large-Ring Cyclodextrins. **2002**, *55*(1 & 2), 39–48.

### Canadian Journal of Chemistry

**39.** Plou, F. J.; Martin, M. T.; Gomez de Segura, A.; Alcalde, M.; Ballesteros, A. Glucosyltransferases Acting on Starch or Sucrose for the Synthesis of Oligosaccharides. **2002**, *80*(6), 743–52.

### Chemical Reviews

**40.** Edlmann, F. T.; Freckmann, D. M. M.; Schumann, H. Synthesis and Structural Chemistry of Non-Cyclopentadienyl Organolanthanide Complexes. **2002**, *102*(6), 1851–96.

**41.** Shibasaki, M.; Yoshikawa, N. Lanthanide Complexes in Multifunctional Asymmetric Catalysis. **2002**, *102*(6), 2187–209.

**42.** Kobayashi, S.; Sugira, M.; Kitagawa, H.; Lam, W. W. L. Rare-Earth Metal Triflates in Organic Synthesis. **2002**, *102*(6), 2227–302.

**43.** Morales-Rojas, H.; Moss, R. A. Phosphorolytic Reactivity of *o*-Iodosylcarboxylates and Related Nucleophiles. **2002**, *102*(7), 2497–521.

**44.** Zhdankin, V. V.; Stang, P. J. Recent Developments in the Chemistry of Polyvalent Iodine Compounds. **2002**, *102*(7), 2523–84.

**45.** Blaney, P.; Grigg, R.; Sridharan, V. Traceless Solid-Phase Organic Synthesis. **2002**, *102*(7), 2607–24.

**46.** Lindstroem, U. M. Stereoselective Organic Reactions in Water. **2002**, *102*(8), 2751–71.

**47.** Sablier, M.; Fujii, T. Mass Spectrometry of Free Radicals. **2002**, *102*(9), 2855–924.

**48.** Chelucci, G.; Thummel, R. P. Chiral 2,2'-Bipyridines, 1,10-Phenanthrolines, and 2,2':6',2''-Terpyridines: Syntheses and Applications in Asymmetric Homogeneous Catalysis. **2002**, *102*(9), 3129–70.

**49.** Song, C. E.; Lee, S.-g. Supported Chiral Catalysts on Inorganic Materials. **2002**, *102*(10), 3495–524.

**50.** Kakkar, A. K. Nano-Organometallics: Heterogenizing Homogeneous Catalysts via Thin Film Methodology. **2002**, *102*(10), 3579–87.

**51.** De Vos, D. E.; Dams, M.; Sels, B. F.; Jacobs, P. A. Ordered Mesoporous and Microporous Molecular Sieves Functionalized with Transition Metal Complexes as Catalysts for Selective Organic Transformations. **2002**, *102*(10), 3615–40.

**52.** Dupont, J.; de Souza, R. F.; Suarez, P. A. Z. Ionic Liquid (Molten Salt) Phase Organometallic Catalysis. **2002**, *102*(10), 3667–91.

### Chemical Society Reviews

**53.** Kim, K. Mechanically Interlocked Molecules Incorporating Cucurbituril and Their Supramolecular Assemblies. **2002**, *31*(2), 96–107.

**54.** Smith, I. W. M. The Liversidge Lecture 2001–02. Chemistry Amongst the Stars: Reaction Kinetics at a New Frontier. **2002**, *31*(3), 137–46.

**55.** Tucker, J. H. R.; Collinson, S. R. Recent Developments in the Redox-Switched Binding of Organic Compounds. **2002**, *31*(3), 147–56.

**56.** van Staden, L. F.; Gravestock, D.; Ager, D. J. New Developments in the Peterson Olefination Reaction. **2002**, *31*(3), 195–200.

### Chemistry of Heterocyclic Compounds

**57.** Soldatenkov, A. T.; Kolyadina, N. M. Chemistry of Indolopyridines with a Bridge-Head Heteroatom. **2001**, *37*(9), 1059–91.

**58.** Yamashkin, S. A.; Yurovskaya, M. A. Pyrroloquinolines. **2001**, *37*(12), 1439–60.

**59.** Litvinov, V. P. Heteryladamantanes: Synthetic Investigations of Recent Years, Biological Activity, and Other Aspects of Practical Application. **2002**, *38*(1), 9–34.

**60.** Aladzheva, I. M.; Bykhovskaya, O. V.; Lobanov, D. I.; Petrovskii, P. V.; Lysenko, K. A.; Mastryukova, T. A. Intramolecular P=S and P=N Alkylation. General Method for Synthesizing 1,2-Heteraphosphacyclanes. **2002**, *38*(1), 95–105.

### Chemistry – A European Journal

**61.** Congreve, M. S.; Ley, S. V.; Scicinski, J. J. Analytical Construct Resins for Analysis of Solid-Phase Chemistry. **2002**, *8*(8), 1768–76.

**62.** Wipf, P.; Kendall, C. Novel Applications of Alkenyl Zirconocenes. **2002**, *8*(8), 1778–84.

**63.** Mellet, C. O.; Defaye, J.; Fernandez, J. M. G. Multivalent Cyclooligosaccharides: Versatile Carbohydrate Clusters with Dual Role as Molecular Receptors and Lectin Ligands. **2002**, *8*(9), 1982–90.

**64.** Hennrich, G.; Anslyn, E. V. 1,3,5–2,4,6-Functionalized, Facially Segregated Benzenes—Exploitation of Sterically Predisposed Systems in Supramolecular Chemistry. **2002**, *8*(10), 2218–24.

### Chemistry in Britain

**65.** Parsons, A. A Race against Tin. **2002**, *38*(2), 42–4.

### CHEMTRACTS: Organic Chemistry

**66.** Kellogg, R. M. Palladium Complex Catalyzed Acylation of Allylic Esters with Acylsilanes. **2001**, *14*(14), 781–4.

**67.** Bergbreiter, D. E. Fabrication of Micro Reaction Cages with Tailored Properties. **2001**, *14*(14), 789–95.

**68.** McReynolds, M. D.; Hanson, P. R. The Three-Component Boronic Acid Mannich Reaction: Structural Diversity and Stereoselectivity. **2001**, *14*(14), 796–801.

**69.** Breslow, R. Biomimetic Regioselective Template-Directed Functionalizations: An Update. **2002**, *15*(2), 59–68.

**70.** Kellogg, R. M. Enantioconvergent Synthesis by Sequential Asymmetric Horner-Wadsworth-Emmons and Palladium-Catalyzed Allylic Substitution Reactions. **2002**, *15*(2), 69–73.

**71.** Moore, J. D.; Hanson, P. R. Hypervalent Iodine-Promoted Phenolic Oxidations: Generation of a Highly Versatile *o*-Quinone Template. **2002**, *15*(2), 74–80.

**72.** Fairweather, N. T.; Curran, D. P. The First Intermolecular Transition Metal-Catalyzed [5 + 2] Cycloadditions with Simple, Unactivated, Vinylcyclopropanes. **2002**, *15*(2), 81–6.

**73.** Sugiura, M.; Kobayashi, S. Palladium-Catalyzed Direct Transformation of Carboxylic Acids to Aldehydes and Ketones. **2002**, *15*(2), 90–8.

**74.** Nakamura, I.; Yamamoto, Y. Room-Temperature Alkyl–Alkyl Suzuki Cross-Coupling of Alkyl Bromides that Possess  $\beta$ -Hydrogens. **2002**, *15*(2), 102–5.

**75.** Hartung, R.; Paquette, L. New Synthetic Tactics Designed to Access Dienes and Polyynes. **2002**, *15*(2), 106–16.

**76.** Appendino, G.; Zonardi, F.; Casiraghi, G. The First Stereoselective Total Synthesis of Quinine. **2002**, *15*(4), 175–82.

**77.** Wender, P. A.; D'Angelo, N. A Facile C–C Bond Cleavage in Epoxides and its use for the Synthesis of Oxygenated Heterocycles by a Ring Expansion Strategy. **2002**, *15*(4), 183–8.

**78.** Harmata, M. Stereoselective Preparation of (Z)-2-(Trialkylsilyloxy)-2-Alkenals by Retrocycloaddition Reactions of 4H-4-Alkyl-5-(Trialkylsilyloxy)-1,3-Dioxins. Useful Reactants for Lewis Acid-Catalyzed [4 + 3] Cyclizations. **2002**, *15*(4), 189–94.

**79.** Kellogg, R. M. Iridium Catalysts for the Borylation of Aromatics. **2002**, *15*(4), 195–200.

**80.** Poli, G.; Prestat, G. Palladium-Catalyzed Cyclization of Allylsilanes with Nucleophilic Displacement of the Silyl Group. **2002**, *15*(4), 204–11.

**81.** Kresge, A. J. Keto–Enol Tautomerism of Phenols in Aqueous Solution. **2002**, *15*(4), 212–5.

**82.** Lagona, J.; Jarvis, B. B. Towards Highly Air-Stable Phosphorus Ligand and Metal-Catalyst Precursors for Cross-Coupling Reactions with Unactivated Aryl Chlorides. **2002**, *15*(4), 220–7.

### Chirality

**83.** Di Bari, L.; Lelli, M.; Pintacuda, G.; Salvadori, P. Yb(fod)<sub>3</sub> in the Spectroscopic Determination of the Configuration of Chiral Diols: A Survey of the Lanthanide Diketonate Method. **2002**, *14*(4), 265–73.

**84.** Uccello-Barretta, G.; Bernardini, R.; Balzano, F.; Salvadori, P. Overall View of the use of Chiral Platinum-(II) Complexes as Chiral Derivatizing Agents (CDAS) for the Enantiodiscrimination of Unsaturated Compounds by <sup>195</sup>Pt NMR. **2002**, *14*(6), 484–9.

**85.** Soai, K.; Sato, I. Asymmetric Autocatalysis and its Application to Chiral Discrimination. **2002**, *14*(7), 548–54.

### Coordination Chemistry Reviews

**86.** Tanaka, K.; Ooyama, D. Multi-Electron Reduction of CO<sub>2</sub> via Ru–CO<sub>2</sub>, –C(O)OH, –CO, –CHO, and –CH<sub>2</sub>–OH Species. **2002**, *226*(1–2), 211–8.

**87.** Izod, K. Complexes of P-Stabilised Carbanions with s- and p-Elements. **2002**, *227*(2), 153–73.

**88.** Aspinall, G. M.; Copsey, M. C.; Leedham, A. P.; Russell, C. A. Imido Analogues of p-Block Oxoanions. **2002**, *227*(2), 217–32.

**89.** Turner, C. A.; Ding, W.; Amster, I. J.; Kutal, C. Ground- and Excited-State Reactivities of Cationic Sandwich and Half-Sandwich Complexes of Iron(II). **2002**, *229*(1–2), 9–16.

### Current Organic Chemistry

**90.** Yoda, H. Recent Advances in the Synthesis of Naturally Occurring Polyhydroxylated Alkaloids. **2002**, *6*(3), 223–43.

**91.** Alcaide, B.; Almendros, P. Recent Advances in the Stereocontrolled Synthesis of Bi- and Tricyclic- $\beta$ -Lactams with Non-Classical Structure. **2002**, *6*(3), 245–64.

**92.** Gil, S.; Parra, M. Dienediolates of Carboxylic Acids in Synthesis. *Recent Advances*. **2002**, *6*(3), 283–302.

### Heteroatom Chemistry

**93.** Chimiak, A.; Przychodzen, W.; Rachon, J. The Thiohydroxamate System. **2002**, *13*(2), 169–94.

### Heterocycles

**94.** Tsoungas, P. G. 1,2-Oxazines and Their N-Oxides in Synthesis. **2002**, *57*(5), 915–53.

**95.** Robinson, B. Syntheses of (–)-Physostigmine, with Particular Emphasis Upon the Clarification of Two Enigmatic Early Synthetic Approaches. **2002**, *57*(7), 1327–52.

**96.** Csende, F.; Stajer, G. Methods for Preparation of  $\gamma$ - and  $\delta$ -Oxo Acids as Useful Synthons for Heterocycles. **2002**, *57*(7), 1353–65.

### Journal of Combinatorial Chemistry

**97.** Dolle, R. E. Comprehensive Survey of Combinatorial Library Synthesis: 2001. **2002**, *4*(5), 369–418.

### Journal of Fluorine Chemistry

**98.** Uneyama, K.; Amii, H. A Review of Mg Metal-Promoted C–F Bond Activation; A Reliable Synthetic Approach to Di-Fluorinated Organic Compounds. **2002**, *114*(2), 127–31.

**99.** Shermolovich, Y.; Timoshenko, V. 1,1-Dihydropoly-fluoroalkylsulfides-Versatile Synthons in Fluoroorganic Chemistry. **2002**, *114*(2), 157–61.

**100.** Chivers, T. Pentafluorophenylboron Halides: 40 Years Later. **2002**, *115*(1), 1–8.

### Journal of Heterocyclic Chemistry

**101.** Lobo, A. M.; Prabhakar, S. Recent Developments in the Synthesis of Biologically Active Indole Alkaloids. **2002**, *39*(3), 429–36.

**102.** Svete, J. Synthesis of Heteroaryl Substituted  $\alpha$ -Amino Acid Derivatives, Polyols, and Related Compounds. **2002**, *39*(3), 437–54.

### Journal of Physical Organic Chemistry

**103.** Thibblin, A. Microcalorimetry as a Tool In Mechanistic Studies of Organic Reactions. **2002**, *15*(4), 233–41.

### Journal of the Chemical Society, Perkin Transactions 1

**104.** de Miguel, Y. R.; Brule, E.; Margue, R. G. Supported Catalysts and Their Applications in Synthetic Organic Chemistry. **2001**, (23), 3085–94.

**105.** Fitzmaurice, R. J.; Kyne, G. M.; Douheret, D.; Kilburn, J. D. Synthetic Receptors for Carboxylic Acids and Carboxylates. **2002**, (7), 841–64.

**106.** Thirsk, C.; Whiting, A. Polyene Natural Products. **2002**, (8), 999–1023.

**107.** Lavilla, R. Recent Developments in the Chemistry of Dihydropyridines. **2002**, (9), 1141–56.

### Natural Product Reports

**108.** Hanson, J. R. Diterpenoids. **2002**, *19*(2), 125–32.

**109.** Hibino, S.; Choshi, T. Simple Indole Alkaloids and Those with a Nonrearranged Monoterpenoid Unit. **2002**, *19*(2), 148–80.

**110.** Bentley, K. W.  $\beta$ -Phenylethylamines and the Isoquinoline Alkaloids. **2002**, *19*(3), 332–56.

### Organic Preparations and Procedures International

**111.** Amantini, D.; Fringuelli, F.; Pizzo, F.; Vaccaro, L. Selected Methods for the Reduction of the Azido Group. **2002**, *34*(2), 109,111–47.

**112.** Lamberth, C. Nucleosides with a Carbon Bridge between Sugar and Nucleobase: The Chemistry of 1'-Homonucleosides and Reversed Nucleosides. A Review. **2002**, *34*(2), 149,151–67.

**113.** Palacios, F.; Ochoa de Retana, A. M.; Martinez de Marigorta, E.; Manuel de los Santos, J. Preparation, Properties and Synthetic Applications of 2H-Azirines: A Review. **2002**, *34*(3), 219–69.

**114.** Wang, C.-C.; Huang, H.-C.; Reitz, D. B. New Developments in the Use of Enantiomerically Enriched Sulfoxides in Stereoselective Syntheses. **2002**, *34*(3), 271–319.

**115.** Dinsmore, C. J.; Beshore, D. C. Syntheses and Transformations of Piperazinone Rings. A Review. **2002**, *34*(4), 367, 369–404.

### Pure and Applied Chemistry

**116.** Yamamoto, A. Toward Development of Environmentally Benign Processes Catalyzed by Transition-Metal Complexes. **2002**, *74*(1), 1–5.

**117.** Knochel, P.; Hupe, E.; Dohle, W.; Lindsay, D. M.; Bonnet, V.; Queguiner, G.; Boudier, A.; Kopp, F.; Demay, S.; Seidel, N.; Calaza, M. I.; Vu, V. A.; Sapountzis, I.; Bunlaksananusorn, T. Functionalized Main-Group Organometallics for Organic Synthesis. **2002**, *74*(1), 11–7.

**118.** Wender, P. A.; Bi, F. C.; Gamber, G. G.; Gosselin, F.; Hubbard, R. D.; Scanio, M. J. C.; Sun, R.; Williams, T. J.; Zhang, L. Toward the Ideal Synthesis. New Transition Metal-Catalyzed Reactions Inspired by Novel Medicinal Leads. **2002**, *74*(1), 25–31.

**119.** Fu, G. C. New Applications of Organometallic Catalysts in Organic Chemistry. **2002**, *74*(1), 33–6.

**120.** Butenschon, H. Arene Chromium Complexes with Functionalized Anellated Rings. Selective Formation of Highly Substituted Polycycles. **2002**, *74*(1), 57–62.

**121.** Genet, J. P. Recent Studies on Asymmetric Hydrogenation. New Catalysts and Synthetic Applications in Organic Synthesis. **2002**, *74*(1), 77–83.

**122.** Jeong, N.; Sung, B. K.; Kim, J. S.; Park, S. B.; Seo, S. D.; Shin, J. Y.; In, K. Y.; Choi, Y. K. Pauson-Khand-type Reaction Mediated by Rh(I) Catalysts. **2002**, *74*(1), 85–91.

**123.** Krief, A.; Colaux-Castillo, C. Asymmetric Dihydroxylation of C:C Double Bonds using Catalytic Amounts of Osmium Tetroxide, Selenides, and Air. **2002**, *74*(1), 107–13.

**124.** Montgomery, J.; Amarasinghe, K. K. D.; Chowdhury, S. K.; Oblinger, E.; Seo, J.; Savchenko, A. V. Nickel-Catalyzed Cyclizations of Alkynyl Enones and Alkynyl Enals. **2002**, *74*(1), 129–33.

**125.** Motherwell, W. B. Curiosity and Simplicity in the Invention and Discovery of New Metal-Mediated Reactions for Organic Synthesis. **2002**, *74*(1), 135–42.

**126.** Ojima, I. New Cyclization Reactions in Organic Syntheses. **2002**, *74*(1), 159–66.

**127.** Pericas, M. A.; Balsells, J.; Castro, J.; Marchueta, I.; Moyano, A.; Riera, A.; Vazquez, J.; Verdaguer, X. Toward the Understanding of the Mechanism and Enantioselectivity of the Pauson–Khand Reaction. Theoretical and Experimental Studies. **2002**, *74*(1), 167–74.

### Russian Chemical Reviews

**128.** Kaberdin, R. V.; Potkin, V. I. Isothiazoles (1,2-Thiazoles): Synthesis, Properties and Applications. **2002**, *71*(8), 673–94.

**129.** Buryak, A. K. The Use of Molecular-Statistical Methods for the Calculation of Thermodynamic Characteristics of Adsorption for Identification of Organic Compounds by Gas Chromatography–Mass Spectrometry. **2002**, *71*(8), 695–706.

**130.** Chupakhin, O. N.; Beresnev, D. G. Nucleophilic Attack on the Unsubstituted Carbon Atoms of Azines and Nitroarenes as an Efficient Strategy for Constructing Heterocyclic Systems. **2002**, *71*(9), 803–18.

**131.** Voitekhovich, S. V.; Gaponik, P. N.; Ivashkevich, O. A. 1,3- and 1,4-Substituted Tetrazolium Salts. **2002**, *71*(9), 819–39.

**132.** Geras'ko, O. A.; Samsonenko, D. G.; Fedin, V. P. Supramolecular Chemistry of Cucurbiturils. **2002**, *71*(9), 840–61.

**133.** Rusanov, A. L.; Likhachev, D. Y.; Myullen, K. Electrolytic Proton-Conducting Membranes Based on Aromatic Condensation Polymers. **2002**, *71*(9), 862–77.

### Science

**134.** Sun, L.; Song, K.; Hase, W. L. A  $S_N2$  Reaction that Avoids its Deep Potential Energy Minimum. **2002**, *296*(5569), 875–8.

**135.** Pratt, D. W. Perspectives: Molecular Dynamics: Biomolecules see the Light. **2002**, *296*(5577), 2347–8.

**136.** Atwood, J. L.; Barbour, L. J.; Jerga, A. Storage of Methane and Freon by Interstitial van der Waals Confinement. **2002**, *296*(5577), 2367–9.

**137.** Dian, B. C.; Longarte, A.; Zwier, T. S. Conformational Dynamics in a Dipeptide after Single-Mode Vibrational Excitation. **2002**, *296*(5577), 2369–73.

### Synlett

**138.** Yamamura, S.; Nishiyama, S. Anodic Oxidation of Phenols Towards the Synthesis of Bioactive Natural Products. **2002**, (4), 533–43.

**139.** Nielsen, M. B.; Diederich, F. Modules for Acetylenic Scaffolding. **2002**, (4), 544–52.

**140.** Alvaro, G.; Savoia, D. Addition of Organometallic Reagents to Imines Bearing Stereogenic N-Substituents. Stereochemical Models Explaining the 1,3-Asymmetric Induction. **2002**, (5), 651–73.

**141.** Yorimitsu, H.; Shinokubo, H.; Oshima, K. Synthetic Radical Reactions in Aqueous Media. **2002**, (5), 674–86.

**142.** Padwa, A.; Bur, S. K.; Danca, D. M.; Ginn, J. D.; Lynch, S. M. Linked Pummerer–Mannich ion Cyclizations for Heterocyclic Chemistry. **2002**, (6), 851–62.

**143.** de Azevedo, C. G.; Vollhardt, K. P. C. Oligocyclopentadienyl Transition Metal Complexes. **2002**, (7), 1019–42.

### Synthesis-Stuttgart

**144.** Ishibashi, H.; Sato, T.; Ikeda, M. 5-Endo-Trig Radical Cyclizations. **2002**, (6), 695–713.

**145.** Studer, A.; Amrein, S. Tin Hydride Substitutes in Reductive Radical Chain Reactions. **2002**, (7), 835–49.

**146.** Kalesse, M.; Christmann, M. The Chemistry and Biology of the Leptomycin Family. **2002**, (8), 981–1003.

### Tetrahedron

**147.** Varma, R. S. Clay and Clay-Supported Reagents in Organic Synthesis. **2002**, *58*(7), 1235–55.

**148.** Prim, D.; Campagne, J.-M.; Joseph, D.; Andrioletti, B. Palladium-Catalyzed Reactions of Aryl Halides with Soft, Non-Organometallic Nucleophiles. **2002**, *58*(11), 2041–75.

**149.** Job, A.; Janeck, C. F.; Bettray, W.; Peters, R.; Enders, D. The SAMP/RAMP-Hydrazone Methodology in Asymmetric Synthesis. **2002**, *58*(12), 2253–329.

**150.** Jarvo, E. R.; Miller, S. J. Amino Acids and Peptides as Asymmetric Organocatalysts. **2002**, *58*(13), 2481–95.

**151.** Agami, C.; Couty, F. The Reactivity of the N-Boc Protecting Group: An Underrated Feature. **2002**, *58*(14), 2701–24.

**152.** Chai, Y.; Hong, S.-p.; Lindsay, H. A.; McFarland, C.; McIntosh, M. C. New Aspects of the Ireland and Related Claisen Rearrangements. **2002**, *58*(15), 2905–28.

**153.** Bender, J. A.; Meanwell, N. A.; Wang, T. The Mono-Functionalization of Symmetrical Polyamines. **2002**, *58*(16), 3111–28.

**154.** Dinsmore, C. J.; Beshore, D. C. Recent Advances in the Synthesis of Diketopiperazines. **2002**, *58*(17), 3297–312.

**155.** Gladysz, J. A.; Curran, D. P. Fluorous Chemistry: From Biphasic Catalysis to a Parallel Chemical Universe and Beyond. **2002**, *58*(20), 3823–5.

**156.** Teobald, B. J. The Nicholas Reaction: The Use of Dicobalt Hexacarbonyl-Stabilized Propargylic Cations in Synthesis. **2002**, *58*(21), 4133–70.

**157.** Tius, M. A. Synthesis of the Cryptophycins. **2002**, *58*(22), 4343–67.

**158.** Bonini, C.; Righi, G. A Critical Outlook and Comparison of Enantioselective Oxidation Methodologies of Olefins. **2002**, *58*(25), 4981–5021.

**159.** Bates, R. W.; Sa-Ei, K. Syntheses of the Sedum and Related Alkaloids. **2002**, *58*(30), 5957–78.

#### Topics in Current Chemistry

**160.** Majoral, J.-P.; Editor New Aspects in Phosphorus Chemistry, I. **2002**, *220*, 1–244.

#### Contributed Volumes

**Progress in Heterocyclic Chemistry. Volume 14.** Gribble, G. W., Gilchrist, T. L., Eds., Elsevier Science: Oxford, U.K., 2002.

**161.** Bergman, J.; Janosik, T. Recent Progress in the Chemistry of Sulphur-Containing Indoles.

**162.** Knight, D. W. Electrophile-Induced 5-Endo Cyclizations.

#### Monographs

**163.** Aiello, R.; Giordano, G.; Testa, F. CD Books—Impact of Zeolites and other Porous Materials on the New Technologies at the Beginning of the New Millennium Elsevier Science: Oxford, U.K., 2002.

**164.** Clark, J.; MacQuarrie, D. Handbook of Green Chemistry & Technology Blackwell Science: Oxford, U.K., 2002.

**165.** Dillard, D. A.; Pocius, A. V.; Chaudhury, M. Adhesion Science and Engineering, 2002.

**166.** Frimmel, F. H.; Abbt-Braun, G.; Heumann, K. G.; Hock, B.; Luedemann, H. D.; Editors Refractory Organic Substances in the Environment Wiley-VCH Verlag: Weinheim, Germany, 2002.

**167.** Gagneaux, E.; De Vos, D. E.; Grange, P.; Jacobs, P. A.; Martens, J. A.; Ruiz, P.; G., P.; Eds. CD-Book. Scientific Bases for the Preparation of Heterogeneous Catalysts Elsevier Science: Oxford, U.K., 2002.

**168.** Herrmann, W. A.; Editor Synthetic Methods of Organometallic and Inorganic Chemistry, Volume 10: Catalysis Thieme: Stuttgart, Germany, 2002.

**169.** Herrmann, W. A., Siebert, W., Eds. Special Issue: Interactions of  $\pi$ -Systems with Metals. [In: *J. Organomet. Chem.*, **2002**; *641*(1–2)]. Elsevier: Lausanne, Switzerland, 2002.

**170.** Herz, W., Falk, H., Kirby, G. W., Moore, R. E., Eds. Progress in the Chemistry of Organic Natural Products. Vol. 82. Springer-Verlag: Wien: Vienna, Austria, 2001.

**171.** Herz, W., Falk, H., Kirby, G. W., Moore, R. E., Eds. Progress in the Chemistry of Organic Natural Products. Vol. 83. Springer-Verlag: Wien: Vienna, Austria, 2002.

**172.** Katsuki, T., Ed. Asymmetric Oxidation Reactions. Oxford University Press: Oxford, U.K., 2001.

**173.** Leigh, G. J., Winterton, N., Eds. Modern Coordination Chemistry: The Legacy of Joseph Chatt. Vol. 386. Royal Society of Chemistry: Cambridge, U.K., 2002.

**174.** Marangoni, A. G.; Narine, S. S. Physical Properties of Lipids. Marcel Dekker: New York, 2002.

**175.** Negishi, E.-i., Ed. Handbook of Organopalladium Chemistry for Organic Synthesis. Vol. 2. John Wiley & Sons: Hoboken, NJ, 2002.

**176.** Ono, N., Ed. The Nitro Group in Organic Synthesis. John Wiley & Sons: New York, 2001.

**177.** Sneddon, J., Ed. Advances in Atomic Spectroscopy. Elsevier Science: Oxford, U.K., 2002.

**178.** Toda, F., Ed. Organic Solid-State Reactions. Kluwer Academic Publishers: Dordrecht, The Netherlands, 2002.

## Index

- Acetylenic scaffolding, 139  
 Acetyltryptophan methylamide conformation, 137  
 Acylsilanes, 66  
 Adamantanes, heteryl-, 59  
 Addition, with ruthenium catalysts, 1  
 Adhesives, book, 165  
 Alcohols, oxidation, catalytic, 6  
 Aldehydes, from carboxylic acids, 73  
 Aldol condensation, asymmetric, 150  
 Alkaloids, isoquinoline, 110  
   Mannich reaction, 12  
   polyhydroxylated, 90  
   sedum, 159  
 Alkenes, asymmetric dihydroxylation, 123  
   coupling, 7  
   dihydroxylation, 29  
   enantioselective oxidation, 158  
   epoxidation, 29  
 Alkyl bromides, cross coupling, 74  
 Alkylidene methoxymethylpyrrolidinamines, 149  
 Alkynyl enals, cyclization, Ni-catalyst, 124  
 Alkynyl enones, cyclization, Ni-catalyst, 124  
 Allylic substitution reactions, 70  
 Allylsilanes, cyclization, 80  
 Amines, from sulfinyl imines, 15  
   preparation, 111  
 Amino acids, heteroaryl, 102  
 Aminohydroxylation, 29  
 Annulene, 14  
 Antitumor agents, 146  
   cryptophycins, 157  
 Arene chromium complex, 120  
 Arenes, sandwich complexes, 89  
 Aromatic condensation polymers, 133  
 Aromatics, borylation, 79  
 Aryl chlorides, cross-coupled with phosphorus ligands, 82  
 Aryl halides, reaction with nucleophiles, 148  
 Atomic spectroscopy, book, 177  
 Autocatalysis, asymmetric, 85  
 Azaphospholanium heterocycle preparation, 60  
 Azaphosphorinanium heterocycle preparation, 60  
 Azido group, reduction, 111  
 Azidoiodanes, 44  
 Azines, fused, 130  
   nucleophilic substitution, 130  
 Azirines, 113  
 Benzene, conformationally controlled, 64  
   H-bonds, 11  
   substituted, 64  
 Benziodazoles, 44  
 Benziodoxoles, 44  
 Benzoquinone, ortho-, 9  
 Biaryls, book, 170  
 Biomimetics, 69  
 Biomolecules, conformation, 135, 137  
   gas-phase analysis, 135  
   gas-phase analysis, 137  
 Bipyridines, asymmetric synthesis, 48  
 Bisacyloxyiodoarenes, 44  
 Butoxycarbonyl protecting group, reactivity, 151  
 Calixarenes, Freon storage, 136  
   methane storage, 136  
 Callystatin A, 146  
 Capsules, hydrogen bonded, self-assembly, 34  
 Carbanions, phosphorus stabilized, 87  
 Carbenes, heterocyclic, N-containing, 19  
 Carbocycles, from radical cyclization, 144  
 Carbohydrate mimics, peptides, 36  
 Carbon dioxide, reduction, Ru catalyst, 86  
   supercritical, 5  
 Carbonylation, 2  
 Carboxylates, synthetic receptors, 105  
 Carboxylic acid, synthetic receptors, 105  
   dienediolates, 92  
   transformations with Pd, 73  
 Catalysis, asymmetric, amino acids, 150  
   asymmetric, peptides, 150  
   book, 168  
 Catalysts, asymmetric, metallocenes, 17  
   chiral, inorganic support, 49  
   enantioselective, screening, 20  
   molecular sieves, functionalized, 51  
   nanoorganometallic thin film, 50  
   ruthenium, 1  
   supported, 104  
 Chiral derivatizing agents, 84  
 Chiral diols, vicinal, 83  
 Claisen rearrangement, chemoselective, 152  
 Clay supported reagents, 147  
 Combinatorial chemistry, traceless, 45  
 Combinatorial libraries, 97  
 Coordination chemistry, book, 173  
 Cryptophycins, synthesis, 157  
 Cucurbituril, 53  
   supramolecular chemistry, 132  
 Cyclization, transition metal catalyzed, 126  
 Cycloaddition, stereoselective, 118  
   with ruthenium catalysts, 1  
 Cyclodextrins, 38  
 Cyclooligosaccharides, 63  
 Cyclopropanation, asymmetric, 17  
 Cytotoxins, 157  
 Diazonamides, 30  
 Dichloroiodoarenes, 44  
 Diels–Alder reaction, catalytic, enantioselective, 23  
   in total synthesis, 24  
 Dienediolates, 92  
 Dienes, cyclization, hydrosilylation, 13  
   cycloisomerization, 13  
 Difluoroiodoarenes, 44  
 Dihydropyridines, 107  
 Diketopiperazines, 154  
 Dimethyl carbonate, 2  
 Dipeptides, conformation, 135, 137  
 Diterpenoid, 108  
 Diynes, preparation, 75  
 Electron transfer, trajectory surface hopping modeling, 35  
 Enantiodiscrimination, unsaturated compounds, 84  
 Encapsulation, 21  
 Environmentally benign processes, transition metals, 116  
 Epoxidation, asymmetric, 17  
 Epoxide polymers, 89  
 Epoxides, oxygenated heterocycle synthesis, 77  
   ring expansion, 77  
 Esters, allylic, acylation, 66  
 Fluorination, 98  
 Fluorohydrocarbon synthons, 99  
 Fluorophenyl boron, 100  
 Fluorous chemistry, biphasic catalysis, 155  
 Friedel Crafts reaction, oxo acid, 96  
 Gas chromatography, parameters, 129  
 Glycoproteins, mammalian, 37  
 Glycosylation, 37  
 Green chemistry, book, 164  
   dimethyl carbonate, 2  
   microwaves, 3  
   supercritical CO<sub>2</sub>, 5  
 Heterophosphacyclanes, synthesis, 60  
 Heterocycles, 5-endo cyclizations, 162  
   from radical cyclization, 144  
   from tetrazolium salts, 131  
   oxo acid synthons, 96  
   Pummerer Mannich ion cyclization, 142  
 Heterocyclic carbenes, nitrogen containing, 19  
 Heterogeneous catalysts, book, 167  
   nanoorganometallic thin film, 50  
 Heteryladamantanes, 59  
 Homonucleosides, 112  
 Horner–Wadsworth–Emmons reaction, 70  
 Host–guest complexes, 132  
 Hydrazone, SAMP, 149  
   RAMP, 149  
 Hydrogenation, asymmetric, 28, 121  
   biphasic, 4  
 Imides, 44  
 Imido analogs, p block, 88  
 Imidoborates, 88  
 Imidophosphates, 88  
 Imidosilicates, 88  
 Imidosulfates, 88  
 Imines, 1,3-asymmetric induction, 140  
   sulfinyl, 15  
 Inclusion complexes, molecular recognition, 32  
 Indole alkaloid, 109  
   synthesis, 101  
 Indoles, sulfur-containing, 161  
 Indolopyridines, synthesis, 57  
 Iodonium salts, 44  
 Iodosylarenes, 44  
 Iodosylcarboxylates, phosphorolytic activity, 43  
 Ireland rearrangement, chemoselective, 152  
 Isomerization, with ruthenium catalysts, 1  
 Isoquinoline alkaloids, 110  
 Isothiazoles, 128  
 Ketones, from carboxylic acids, 73  
 Kinetics, 54  
 Lactams,  $\beta$ -, bicyclic, 91

- $\beta$ -, tricyclic, 91  
 Langmuir Blodgett catalysts, nanoorganometallic thin film, 50  
 Lanthanide complex, asymmetric catalysis, 41  
 Leptomycin B, 146  
 Lipids, physical properties, book, 174  
 Macrocyclic cavitands, 132  
 Mannich reaction, boronic acid, 68  
   vinyllogous, 12  
 Mass spectrometry, free radicals, 47  
   parameters, 129  
 Metal mediated organic synthesis, 125  
 Metallosalen complexes, chiral, 17  
 Methylation, 2  
 Methylenation, Peterson reaction, 56  
 Methylenecyclopropanes, 16  
 Micro reaction cage, 67  
 Microcalorimetry, 103  
 Microwaves, homogeneous catalysis, 3  
   non-thermal effects, 27  
 Molecular recognition, 21  
 Molecular sieves, mesoporous, book, 163  
   with transition metals, 51  
 Monoterpenoid alkaloids, nonrearranged, 109  
 Natural products, book, 170–1  
 Nicholas reaction, 156  
 Nitro group, in synthesis, book, 176  
 Nitroarenes, nucleophilic substitution, 130  
 Nucleophilic substitution mechanism, ab initio, 134  
 Olefins, asymmetric dihydroxylation, 123  
   coupling, 7  
   dihydroxylation, 29  
   enantioselective oxidation, 158  
   epoxidation, 29  
   oxidation, 29  
 Oligocyclopentadienyl transition metal complex, 143  
 Oligosaccharides, synthesis using glycosyltransferase, 39  
 Organolanthanides, non cyclopentadienyl, 40  
 Organometallic catalysts, 119  
   ionic liquids, 52  
 Organometallic Chemistry, catalysis, book, 168  
 Organometallics, main group, functionalized, 117  
 Organopalladium chemistry, book, 175  
 Oxazines, 94  
 Oxidation reactions, asymmetric, book, 172  
 Oxoanions, 88  
    $\pi$  systems, interaction with metals, 169  
 Pauson–Khand reaction, 127  
   Rh catalyst, 122  
 Pentafluorophenylboron halides, 100  
 Peptides, synthesis, 22  
   solid support, 61  
 Peterson olefination reaction, 56  
 Phenanthroline, asymmetric synthesis, 48  
 Phenols, anodic oxidation, 138  
   keto enol tautomerization, 81  
   oxidation, 71  
 Phenylethylamines, 110  
 Phorbol, 118  
 Phosphacyclanes, hetero-, synthesis, 60  
 Phosphorus chemistry, 160  
 Phosphorus ligands, aryl chloride cross coupling, 82  
 Physostigmine, 95  
 Piperazinediones, 154  
 Piperazinones, transformation, 115  
 Polyamines, acylation, 153  
   functionalized, 153  
 Polycycles, highly substituted, 120  
 Polyene natural products, 106  
 Polyfluoroalkylsulfides, dihydro-, 99  
 Polyols, synthesis, 102  
 Polyyenes, preparation, 75  
 Porphyrins, book, 171  
 Propargylic cations, Co stabilized, 156  
 Protecting groups, for aromatics, bromine, 25  
   N-Boc, reactivity, 151  
 Pseudorotaxane, 53  
 Pummerer Mannich ion cyclization, heterocycles, 142  
 Pyrazolylborate complexes, 18  
 Pyrroloquinoline, 58  
 Quinine, total synthesis, 76  
 Quinones, ortho-, 71  
 Radical reactions, in water, 141  
 Rare earth metal triflates, 42  
 Redox switched binding, 55  
 Refractory organic substances, book, 166  
 Rotaxane derivatives, 53  
 Sandwich compounds, Fe, 89  
 Silicon, cross coupling, 8  
 Silesquioxanes, oligomeric, 33  
 Solid-phase synthesis, 61  
   traceless, 45  
 Solid-state reactions, book, 178  
 Solvents, water, organic reactions, 46  
   water, radical reactions, 141  
 Spiropentasiladienes, 26  
 Steroids, synthesis, 69  
 Sulfoxides, in synthesis, 114  
 Supramolecular organic crystals, gas storage, 136  
 Suzuki cross coupling, 74  
 Taxol, 118  
   book, 171  
 Terpyridine, asymmetric synthesis, 48  
 Tetrapyrroles, book, 171  
 Tetrazolium salts, substituted, 131  
 Thiaphospholanium heterocycles, preparation, 60  
 Thiohydroxamate, 93  
 Tin hydrides, free radical reactions, 65  
 Tin hydrides, in radical reactions, 145  
 Toluene, photodissociation, 31  
   photoisomerization, 31  
 Trialkylsiloxyalkenals, preparation, 78  
 Tributylstannane hydride, alternatives, 65  
 Trifluoromethyl group, C–F bond cleavage, 98  
 Trimethylenemethane, alkoxy-, 10  
   dipolar, 10  
 Triorganosilane, 65  
 Vinylcyclopropanes, cycloaddition, 72  
 Ylides, 44  
 Zeolites, book, 163  
 Zirconocenes, alkenyl, 62  
 JO0235928